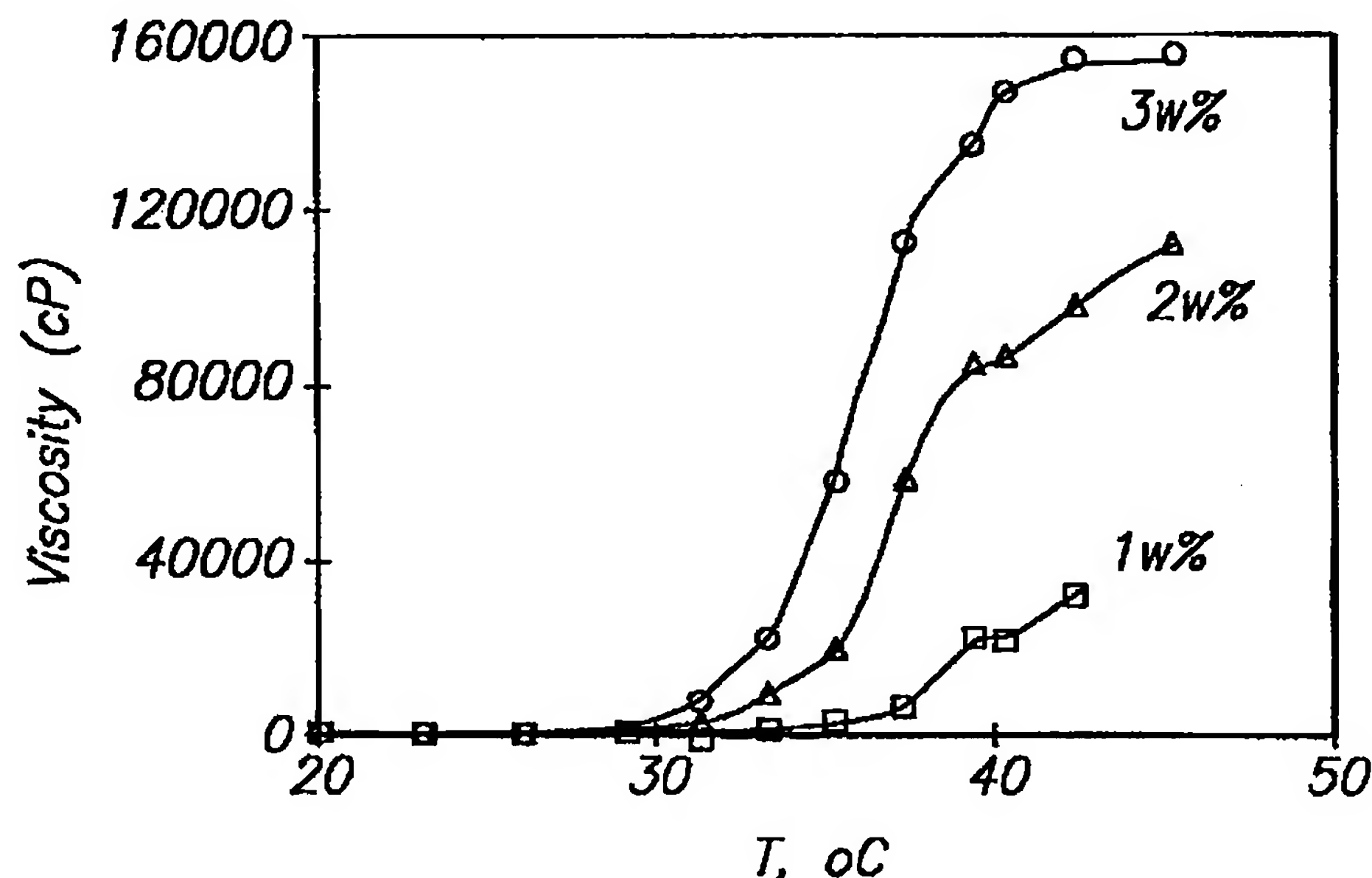


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(54) Title: COMPOSITIONS FOR COSMETIC APPLICATIONS**(57) Abstract**

A cosmetic composition is described having a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.

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COMPOSITIONS FOR COSMETIC APPLICATIONS

This application is a continuation-in-part application of copending application U.S.S.N. 60/034,805 filed January 2, 1997, and entitled "Responsive Polymer
5 Networks and Methods of Their Use", which is a continuation-in-part application of copending application PCT/US96/10376 filed June 14, 1996, designating the United States, and entitled "Responsive Polymer Networks and Methods of Their Use", which is a continuation-in-part application of copending application U.S.S.N. 08/580, 986
10 filed January 3, 1996, and entitled "Responsive Polymer Networks and Methods of Their Use", each of which is incorporated entirely by reference.

Field of the Invention

The present invention relates to a cosmetic composition useful in a variety of topical and personal care products, including treatments of disorders and imperfections
15 of the skin or other areas of the body. More particularly, the present invention is directed to a cosmetic composition comprising a poloxamer:poly(acrylic acid) polymer network that can be designed to reversibly gel over a wide range of conditions to provide a composition having a controllable range of viscosities, making it useful in a variety of cosmetic and personal care applications.

20

Background of the Invention

Many examples are known of cosmetic compositions intended for treatment of the skin or elsewhere on the body, where it is desired to have certain properties of viscosity. Hydrogels, such as cellulose, have been included as thickeners in cosmetic
25 compositions. A hydrogel is a polymer network which absorbs a large quantity of water without the polymer dissolving in water. The hydrophilic areas of the polymer chain absorb water and form a gel region. The extent of gelation depends upon the volume of the solution which the gel region occupies.

Reversibly gelling solutions are known in which the solution viscosity increases
30 and decreases with an increase and decrease in temperature, respectively. Such

reversibly gelling systems are useful wherever it is desirable to handle a material in a fluid state, but performance is preferably in a gelled or more viscous state.

A known material with these properties is a thermal setting gel using block copolymer polyols, available commercially as Pluronic® polyols (BASF, Ludwigshafen, Germany), which is described in U.S. Patent No. 4, 188, 373. Adjusting the concentration of the polymer gives the desired liquid-gel transition. However, concentrations of the polyol polymer of at least 18-20% by weight are needed to produce a composition which exhibits such a transition at commercially or physiologically useful temperatures. Also, solutions containing 18-20% by weight of responsive polymer are typically very viscous even in the "liquid" phase, so that these solutions can not function under conditions where low viscosity, free-flowing is required prior to transition. In addition, these polymer concentrations are so high that the material itself may cause unfavorable interactions during use.

Another known system which is liquid at room temperature, but forms a semi-solid when warmed to about body temperature is formed from tetrafunctional block polymers of polyoxyethylene and polyoxypropylene condensed with ethylenediamine, commercially available at Tetronic® polyols. These compositions are formed from approximately 10% to 5-% by weight of the polyol in an aqueous medium. See, U.S. Patent No. 5,252,318.

Joshi, et al. in U.S. Patent No. 5,252,318 reports reversible gelling compositions which are made up of a physical blend of a pH-sensitive gelling polymer (such as a cross-linked poly(acrylic acid) and a temperature-sensitive gelling polymer (such as methyl cellulose or block copolymers of poly(ethyleneoxide) and poly(propyleneoxide)). In compositions including methylcellulose, 5- to 8-fold increases in viscosity are observed upon a simultaneous change in temperature and pH for very low methylcellulose levels (1-4% by weight). See, Figs. 1 and 2 of Joshi, et al. In compositions including Pluronic® and Tetronic® polyols, commercially available forms of poly(ethyleneoxide)/poly(propyleneoxide) block copolymers, significant increases in viscosity (5- to 8-fold) upon a simultaneous change in temperature and pH are observed only at much higher polymer levels. See, Figs. 3-6 of Joshi, et al.

Hoffman, et al. in WO95/24430 disclose block and graft copolymers comprising a pH-sensitive polymer component and a temperature-sensitive polymer component. The block and graft copolymers are well-ordered and contain regularly repeating units of the pH-sensitive and temperature-sensitive polymer components. The copolymers are described as having a lower critical solution temperature (LCST), at which both solution-to-gel transition and precipitation phase transition occur. Thus, the transition to a gel is accompanied by the clouding and opacification of the solution. Light transmission is reduced, which may be undesirable in many applications, where the aesthetic characteristics of the composition are of some concern.

Thus, the known systems which exhibit reversible gelation are limited in that they require large solids content and/or in that the increase in viscosity is less than 10-fold. In addition, some known systems exhibit an increase in viscosity which is accompanied with the undesirable opacification of the composite.

Summary of the Invention

It is an object of the present invention to provide a cosmetic composition which includes a component capable of reversible gelation or viscosification.

It is a further object of the invention to provide a cosmetic composition which includes an ingredient capable of gelation or viscosification at very low solids content.

It is another object of the present invention to provide a cosmetic composition which possesses improved flow and gelation characteristics as compared to properties possessed by conventional reversible gelation compositions.

It is a further object of the invention to provide a polymer network composition for use in cosmetic compositions useful as a surfactant or emulsifier in the solubilization of additives and, in particular, hydrophobic additives.

It is a further object of the invention to provide a cosmetic composition which possesses the appropriate thickness, emolliency and cosmetic effect with a minimum of solids content.

It is a further object of the invention to provide a polymer network for use in cosmetic compositions useful as a suspending agent for otherwise insoluble additives.

It is yet a further object of the present invention to provide a composition capable of solubilizing emulsions at elevated temperatures.

It is yet a further object of the invention to provide new and useful cosmetic compositions incorporating the reversibly gelling polymer network composition of the present invention, which take advantage of its unique advantageous properties.

It is yet another object of the present invention to provide reversibly gelling polymer network compositions which are composed of biocompatible polymers.

These and other objects of the invention are achieved with a cosmetic compositions which incorporates a poloxamer:poly(acrylic acid) polymer network as a cosmetically acceptable carrier. The polymer network comprises a poloxamer component randomly bonded to a poly(acrylic acid), or PAA, component in and aqueous-based medium, the polymer network being capable of aggregating in response to an increase in temperature. The reverse thermal viscosifying poloxamer:poly(acrylic acid) polymer network includes random covalent bonding between the poly(acrylic acid) component and the poloxamer component of the network. The polymer network may also include some unbound or "free" poloxamer or other additives which contribute to or modify the characteristic properties of the polymer composition.

In addition, the cosmetic composition includes a cosmetic agent selected to provide a preselected cosmetic effect. By "cosmetic agent", as that term is used herein, it is meant that the additive imparts a cosmetic effect. A cosmetic effect is distinguishable from a pharmaceutical effect in that a cosmetic effect relates to the promoting bodily attractiveness or masking the physical manifestation of a disorder or disease. In contrast, a pharmaceutical seeks to treat the source or symptom of a disease or physical disorder. It is noted however, that the same additives may have either a cosmetic or pharmaceutical effect, depending upon the amounts used and the manner of administration.

By "cosmetic", as that term is used herein, it is meant the cosmetic and personal-care applications intended to promote bodily attractiveness or to cover or mask the physical manifestations of a disorder or disease. Cosmetics include those products subject to regulation under the FDA cosmetic guidelines, as well as sunscreen products,

acne products, skin protectant products, anti-dandruff products, and deodorant and antiperspirant products.

By "gelation" or viscosification, as that term is used herein, it is meant a drastic increase in the viscosity of the polymer network solution. Gelation is dependent on the initial viscosity of the solution, but typically a viscosity increase in the range of 2- to 100-fold, and preferably 5- to 50-fold, and more preferably 10- to 20-fold is observed in the polymer network which is used in the preparation of the cosmetic compositions of the invention. Such effects are observed in a simple polymer network solution and the effect may be modified by the presence of other components in the cosmetic composition.

By "reversibly gelling" as that term is used herein, it is meant that the process of gelation takes place upon an *increase* in temperature rather than a decrease in temperature. This is counter-intuitive, since it is generally known that solution viscosity *decreases* with an increase in temperature.

As used herein, "poloxamer" is a triblock copolymer derived from poly(ethyleneoxide)-poly(propyleneoxide)-poly(ethyleneoxide) blocks. The poloxamer is capable of responding to a change in temperature by altering its degree of association and/or agglomeration. The aggregation may be in the form of micelle formation, precipitation, labile cross-linking or other factors. The poloxamer has the general formula of a triad ABA block copolymer, $(P_1)_a(P_2)_b(P_1)_a$ where P_1 = poly(ethyleneoxide) and P_2 = poly(propyleneoxide) blocks, where a is in the range of 10-50 and where b is in the range of 50-70.

The poly(acrylic acid) component includes poly(acrylic acid) and its salts. The poly(acrylic acid) supports and interacts with the poloxamer component so that a multi-material, responsive polymer network is formed. The interaction of the poloxamer and poly(acrylic acid) exhibits a synergistic effect, which magnifies the effect of the poloxamer component in viscosifying and/or gelling the solution.

The novel interaction between the constituent polymers components of the polymer network permits formation of gels at very low solids content. Gelation and/or viscosification is observed in aqueous solutions having about 0.01 to 20 wt% of the

poloxamer component and about 0.01 to 20 wt% of the poly(acrylic acid) component. A typical reversibly gelling polymer network may be comprised of less than about 4 wt% of total polymer solids (e.g., poloxamer and poly(acrylic acid)) and even less than 1 wt% total polymer solids while still exhibiting reverse thermal viscosification. Of course, the total solids content including additives of a reversibly gelling polymer network composition may be much higher. The viscosity of the gel increases at least ten-fold with an increase in temperature of about 5°C at pH 7 and 1 wt% polymer. Viscosity increases may be even greater over a larger temperature range at pH 7 and 1% polymer network content.

10 The relative proportion of poloxamer and poly(acrylic acid) may vary dependent upon the desired properties of the polymer composition. In one embodiment, the poloxamer is present in a range of about 1 to 20 wt% and the poly(acrylic acid) is present in a range of about 99 to 80 wt%. In another embodiment, the poloxamer component is present in a range of about 79 to 60 wt%. In another embodiment, the poloxamer component is present in a range of about 41 to 50 wt%. In another embodiment, the poloxamer component is present in a range of about 51 to 60 wt% and the poly(acrylic acid) component is present in a range of about 49 to 40 wt%. In yet another embodiment, the poloxamer component is present in a range of about 61 to 90 wt% and the poly(acrylic acid) component is present in a range of about 39 to 20 wt%. In another embodiment, the poloxamer component is present in a range of about 81 to 99 wt% and the poly(acrylic acid) component is present in a range of about 10 to 1 wt%.

25 The poloxamer:poly(acrylic acid) polymer network described above is included in a cosmetic composition to improve the flow characteristics, thickness and other properties of the composition. The composition includes additional cosmetic agents, such as are needed for the cosmetic purpose of the composition. Additives also may be included to modify the polymer network performance, such as to increase or decrease the temperature of the liquid-to-gel transition and/or to increase or decrease the viscosity of the responsive polymer composition.

In one aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to impart thickening properties to the cosmetic composition at the use and/or application temperature. Such thickening properties include enhanced overall viscosity, as well as a desirable viscosity response with temperature. The polymer network may be useful as a thickener in pH ranges where other thickeners are not effective.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to stabilize and solubilize hydrophobic agents in the cosmetic composition. The polymer network may be included to increase emulsion stability. Many emulsions, i.e., suspension of small droplets or particles of a first material in a second material, lose viscosity upon heating. As will be demonstrated herein, the poloxamer:poly(acrylic acid) polymer network retains its emulsifying properties even with temperature increase.

In addition, it may be included in the composition to impart emolliency to the composition. The composition may also act as a film-forming agent after it has been applied to the skin. This film-forming agent may be used as a barrier to prevent water loss from the skin which contributes to the moisturization of the skin.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network may be included as an additive in cosmetic applications to prevent viscosity loss at elevated temperatures.

Brief Description of the Drawing

The invention is described with reference to the Drawing, which is presented for the purpose of illustration and is in no way intended to be limiting, and in which:

FIG. 1 is a graph of viscosity vs. temperature for a 1 wt%, 2 wt%, and 3 wt% responsive polymer network aqueous composition of a poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 0.44 sec^{-1} ;

FIG. 2 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition demonstrating reversibility of the viscosity response;

FIG. 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates;

FIG. 4 shows a viscosity response curve for a 2 wt% poloxamer:poly(acrylic acid) polymer network composition prepared with nominal mixing and stirring and prepared using high shear homogenization (8000 rpm, 30 min);

FIG. 5 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition at various pHs;

FIG. 6 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition of 0.25 wt% KCl;

FIG. 7 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition of 0.5 wt% acetamide MEA;

FIG. 8 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition without and with 5 wt%, 10 wt% and 20 wt% added ethanol, respectively;

FIG. 9 is an illustration of a reversibly gelling polymer network used as an emulsifier and stabilizer for a hydrophobic agent;

FIG. 10 is a schematic illustration of the poloxamer:poly(acrylic acid) polymer network below and above the transition temperature illustrating the aggregation of the hydrophobic poloxamer regions;

FIG. 11 is a graph of viscosity vs. pH for a 1 wt% responsive polymer network aqueous composition of a poloxamer/poly(acrylic acid) (1:1) measured at a shear rate of 0.44 sec^{-1} ;

FIG. 12 is a plot of viscosity vs. temperature for (a) a 1 wt% responsive polymer network aqueous composition of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) and (b) a 1 wt% physical blend of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate 0.22 sec^{-1} ;

FIG. 13 is a plot of viscosity vs. temperature for a 1 wt% responsive polymer network aqueous composition of Pluronic® F88 poloxamer:poly(acrylic acid) (1:1) in deionized water at pH 7.0 measured at shear rate of 22 sec^{-1} ;

FIG. 15 is a plot of viscosity vs. temperature for a responsive polymer network composition of 2 wt% Pluronic® F123 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 22 sec^{-1} ;

FIG. 16 is a plot of viscosity vs. temperature for 1 wt% made of series of poloxamers and poly(acrylic acid) (1:1) in deionized water at a shear rate of 132 sec^{-1} ;

FIG. 17 is a plot showing release of hemoglobin from a poloxamer:poly(acrylic acid) polymer network of the invention;

FIG. 18 is a plot showing the release of lysozyme from the poloxamer:poly(acrylic acid) polymer complex of the invention;

FIG. 19 is a plot showing release of insulin from a poloxamer:poly(acrylic acid) polymer network composition of the invention;

FIG. 20 is a plot of viscosity vs. temperature for a poloxamer:poly(acrylic acid) polymer network composition (a) before and (b) after sterilization by autoclave;

FIG. 21 is a plot of viscosity vs. temperature for an oil-free moisturizing formulation prepared from (a) a responsive polymer network composition of the invention and (b) a convention oil-in-water formulation;

FIG. 22 is a plot of equilibrium solubility of estradiol (A, B) and progesterone (C, D) in aqueous solutions (pH 7) of Pluronic® F127 (A, C) and responsive polymer network (B, D) vs. temperature;

FIG. 23 is a plot of the ratio of equilibrium solubilities of estradiol in responsive polymer network and water vs. polymer concentration in the responsive polymer network solutions;

FIG. 24 is a plot of the effect of loading fluorescein on the onset of gelation of responsive polymer network vs. total polymer concentration in responsive polymer network solution (pH 7.0);

FIG. 25 is a plot of the percentage of (a) estradiol and (b) progesterone release from responsive polymer network vs. time;

FIG. 26 is a plot of the rate of progesterone release and macroscopic viscosity vs. polymer concentration;

FIG. 27 is a plot of the percentage of progesterone release vs. polymer concentration in responsive polymer network; and

5 FIG. 28 is a plot of the relative diffusivity of poly(styrene) latex particles in water and responsive polymer network.

Detailed Description of the Invention

The present invention is directed to a cosmetic composition comprising a
10 cosmetically acceptable carrier comprising a novel poloxamer:poly(acrylic acid)
polymer network. The polymer network functions as a temperature sensitive thickening
agent, and in addition possesses surfactant and emulsifying capabilities which may be
beneficial to the cosmetic composition. The polymer network composition according to
the invention includes a poloxamer component randomly bonded to a poly(acrylic acid)
15 component. The two polymer component may interact with one another on a molecular
level. The polymer network contains about 0.01 - 20 wt% each of poloxamer and
poly(acrylic acid). Exemplary polymer network compositions range from about 1:10 to
about 10:1 poloxamer:poly(acrylic acid). Polymer network gel compositions which
exhibit a reversible gelation at body temperature (25-40°C) and/or at physiological pH
20 (ca. pH 3.0-9.0) and even in basic environment up to pH 13 (hair care) are particularly
preferred for cosmetic applications.

In one embodiment of the invention, a 1:1 poloxamer:poly(acrylic acid) polymer
network at appropriate pH exhibits flow properties of a liquid at about room
temperature, yet rapidly thickens into a gel consistency of at least about five times
25 greater, preferably at least about 10 times greater, and even more preferably at least
about 30 times and up to 100 times greater, viscosity upon increase in temperature of
about 10°C and preferably about 5°C. The reversibly gelling polymer network of the
present invention exhibit gelation even at very low polymer concentrations. For
example, polymer network compositions at pH 7 comprising about 0.5 wt% poloxamer
30 component and about 0.5 wt% PAA exhibits a significant increase in viscosity from a

free-flowing liquid (50 cps) to a gel (6000 cps). The observed gelation takes place at low solids contents, such as less than 20 wt% or preferably less than about 10 wt%, or more preferably less than about 2.5 wt% or most preferably less than about 0.1 wt%. Thus, only a small amount by weight of the polymer network need be incorporated into
5 a cosmetic composition in order to provide the desired thickening or viscosifying effect.

The reverse viscosification effect at low polymer concentrations provides clear, colorless gels which are particularly well-suited to cosmetic applications. For example, very little residue is formed upon dehydration which may be important in some applications, such as in topically applied cosmetics. An additional advantage of the
10 polymer network of the invention is that it remains clear and translucent above and below the critical temperature or pH. These characteristics of the reversibly gelling polymer network make it well suited for use in cosmetic compositions.

The polymer network of the present invention technology may be added to cosmetic formulations to increase the thickness and viscosity of the composition. The
15 poloxamer:poly(acrylic acid) polymer network possesses hydrophobic regions capable of aggregation. Unlike conventional thickeners, the aggregation of the polymer network of the present invention is temperature sensitive. Thus the inventive polymer network of the present invention may have a transition temperature (i.e., temperature of aggregation) above room temperature so that the cosmetic composition is of low
20 viscosity at or below room temperature and is of high viscosity at or around body temperature (body temperature includes both surface and internal body temperature). Thus, a composition may be prepared at low temperatures while the polymer network is in a low viscosity state. Mixing of ingredients under low viscosity is expected to be easier, thus simplifying the manufacturing process. Yet, the resultant mixture would be
25 of increased viscosity at use temperatures. As a further advantage, a cosmetic composition comprising poloxamer:poly(acrylic acid) polymer network may be spread thinly to allow for even application, due to its low viscosity at room temperature, but will thicken and "fill" the skin contours upon warming up to body surface temperature.

In another aspect of the invention, the composition may be applied through a
30 nozzle that provides high shear to reduce viscosity, yet the composition regains its

viscosity after application to the skin. This contrasts with conventional formulations which permanently lose viscosity after being subjected to high shear.

In another aspect of the invention, the composition may be formulated and applied as a liquid, spray, semi-solid gel, cream, ointment, lotion, stick, roll-on
5 formulation, mousse, pad-applied formulation, and film-forming formulation.

The poloxamer:poly(acrylic acid) polymer network may also be included in a cosmetic composition for use as a stabilizing, solubilizing or emulsifying agent for a hydrophobic component of the cosmetic formulation. The strong hydrophilic regions of the poloxamer resulting from aggregation and micelle formation create hydrophobic
10 domains which may be used to solubilize and control release of hydrophobic agents. Similar micelle-based systems have been shown to protect trapped peptides against enzymatic degradation from surface enzymes.

The reversibly gelling polymer network of the present invention is a unique polymer composition designed to abruptly change its physical characteristics or the
15 characteristics and properties of materials mixed therewith with a change in temperature. Without intending to be bound by any particular mechanism or chemical structure, it is believed that the structure of the polymer network involves a random bonding of the poloxamer onto the backbone of the poly(acrylic acid). A portion of the poloxamer which is present during the polymerization reaction which forms the
20 poly(acrylic acid) is bonded to the backbone of the forming poly(acrylic acid) through hydrogen abstraction and subsequent reaction. See detailed discussion of the mechanism, below. The combination of the poly(acrylic acid) and randomly bonded poloxamer gives the composition its unique properties. Any free poloxamer remaining after polymerization of PAA remains associated with the random co-polymer, resulting
25 in a miscible composition. Free poloxamer may also be present in the polymer network composition; however, its presence is not required in order to observe reverse thermal viscosification.

The poly(acrylic acid) may be linear, branched and/or cross-linked. Poly(acrylic acid) is capable of ionization with a change in pH of the solution. By
30 ionization, as that term is used with respect to poly(acrylic acid), it is meant the

formation of the conjugate base of the acrylic acid, namely acrylate. As used herein, poly(acrylic acid) includes both ionized and non-ionized versions of the polymer.

Changes in ionic strength may be accomplished by a change in pH or by a change in salt concentration. The viscosifying effect of the polymer network is partly a function of the ionization of the poly(acrylic acid); however, reverse thermal gelling may occur without ionization. Changes to the ionic state of the polymer causes the polymer to experience attractive (collapsing) or repulsive (expanding) forces. Where there is no need or desire for the composition to be applied in a high viscosity state, it may be possible to prepare the composition as non-ionized poly(acrylic acid). The body's natural buffering ability will adjust the pH of the applied composition to ionize the poly(acrylic acid) and thereby develop its characteristic viscosity.

The poloxamer possesses regions of hydrophobic character, e.g., poly(propyleneoxide) blocks, and hydrophilic character, e.g., poly(ethyleneoxide) blocks. The poloxamer may be linear or branched. Suitable poloxamers include triad block copolymers of poly(ethyleneoxide) and poly(propyleneoxide) having the general formula $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethyleneoxide), and P_2 = poly(propyleneoxide) blocks, where a is in the range of 10-50 and where b is in the range of 50-70, where poly(propyleneoxide) represents the hydrophobic portion of the polymer and poly(ethyleneoxide) represents the hydrophilic portion of the polymer. Pluronic® polymers (BASF) are commercially available for (a) in the range of 16 to 48 and (b) ranging from 54-62. One or more poloxamers may be used in the reversibly gelling polymer network composition of the present invention.

The reversibly gelling responsive polymer networks compositions of the present invention are highly stable and do not exhibit any phase separation upon standing or upon repeated cycling between a liquid and a gel state. Samples have stood at room temperature for more than three months without any noticeable decomposition, clouding, phase separation or degradation of gelation properties. This is in direct contrast to polymer blends and aqueous mixed polymer solutions, where phase stability and phase separation is a problem, particularly where the constituent polymers are immiscible in one another.

And example of the dramatic increase in viscosity and of the gelation of the reversibly gelling polymer network compositions of the invention is shown in Figure 1. Figure 1 is a graph of viscosity vs. temperatures for 1 wt%, 2 wt%, and 3 wt% polymer network compositions comprising 1:1 poloxamer:poly(acrylic acid) hydrated and neutralized. The viscosity measurements were taken on a Brookfield viscometer at a shear rate of 0.44 sec^{-1} at pH 7.0. All solutions had an initial viscosity of about 1080 cP and exhibited a dramatic increase in viscosity to gel point at about 35°C . This is not typical of all polymer network compositions since polymerization condition will affect initial viscosity. Final viscosities were approximately 33,000 cP, 100,000 cP and 155,000 cP for the 1 wt%, 2 wt% and 3 wt% compositions, respectively. This represents viscosity increases of about 30-, 90- and 140-fold, respectively. This effect is entirely reversible. Upon cooling, the composition regains its initial viscosity. This is demonstrated in Figure 2, where a 1 wt% poloxamer:poly(acrylic acid) composition is warmed through the transition temperature up to 35°C (simple curve), cooled to room temperature (24°C , ticked curve) and then warmed again up to above the transition temperature (open box curve). The viscosity response was virtually identical in all three instances.

As would be expected with a non-Newtonian system, the solution viscosity differs with different shear rates. Figure 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates. The viscosity response is consistent between 24°C and 34°C ; however, the final viscosity is reduced with increasing shear rate.

However, unlike many prior art hydrogels, e.g., carbomers, the poloxamer:poly(acrylic acid) polymer network composition does not permanently lose viscosity after being subjected to high shear conditions. The poloxamer:poly(acrylic acid) polymer network composition remains unaffected by such shear conditions as homogenization. Figure 4 compares the viscosity response curve of a 2 wt% poloxamer:poly(acrylic acid) polymer composition prepared with nominal mixing (simple line) and stirring with that of a polymer composition of similar composition

prepared using high shear homogenization designated by a ticked line (8000 rpm, 30 min). No significant decrease in viscosity is observed.

A number of factors influence the viscosity and transition temperature of the composition. The more important factors include polymer concentration, pH, and presence and nature of additives.

The effect of pH on the viscosity of reversibly gelling polymer networks is shown in Figure 5. Increasing pH from the starting pH has a lesser effect on the viscosity than decreasing the pH. This may relate to the extent of ionization of the poly(acrylic acid) component of the polymer network as discussed above. This may be clearly seen in Figure 5 when comparing the viscosity response of a 1 wt% poloxamer:poly(acrylic acid) polymer composition at pH 5 and pH 11. Satisfactory viscosities can be obtained at high pHs indicating the potential value of the reversibly gelling polymer network in products such as depilatories, hair straighteners and hair relaxers.

The responsive polymer network may also include additives for influencing the performance of the polymer composition, such as the transition temperature and the viscosity of the polymer composition above the transition temperature. The following list is not intended to be exhaustive but rather illustrative of the broad variety of additives which can be used.

These materials include solvents (e.g., 2-propanol, ethanol, acetone, 1,2-pyrrolidinone, N-methylpyrrolidinone), salts (e.g., calcium chloride, sodium chloride, potassium chloride, sodium or potassium phosphates, borate buffers, sodium citrate), preservatives (benzalkonium chloride, phenoxyethanol, sodium hydroxymethylglycinate, ethylparaben, benzoyl alcohol, methylparaben, propylparaben, butylparaben, Germaben II), humectant/moisturizers (acetamide MEA, lactimide MEA, hydrolyzed collagen, mannitol, panthenol, glycerin), lubricants (hyaluronic acid, mineral oil, PEG-60-lanolin, PPG-12-PEG-50-lanolin, PPG-2 myristyl ether propionate) and surfactants.

Surfactants may be divided into three classes: cationic, anionic, and non-ionics.

An example of a cationic surfactant used is ricinoleamidopropyl ethyldimonium

ethosulfate (Lipoquat R). Anionic surfactants include sodium dodecyl sulfate and ether sulfates such as Rhodapex CO-436. Nonionic surfactants include Surfynol CT-111, TG, polyoxyethylene sorbitan fatty acid esters such as Tween 65 and 80, sorbitan fatty acid esters such as Span 65, alkylphenol ethoxylates such as Igepal CO-210 and 430, dimethicone copolyols such as Dow Corning 190, 193, and Silwet L7001.

The addition of polymers has been studied including xanthan gum, cellulose such as hydroxyethylcellulose (HEC), carbomethoxycellulose (CMC), lauryldimonium hydroxypropyl oxyethyl cellulose (Crodacel QL), hydroxypropylcellulose (HPC), and hydroxypropylmethylcellulose (HPMC), poly(acrylic acid), cyclodextrins, methyl acrylamido propyl triammonium chloride (MAPTAC), polyethylene oxide, polyvinylpyrrolidone, polyvinyl alcohol, and propylene oxide/ethylene oxide random copolymers. Poloxamers may also be used as additives. Examples include both the Pluronic® polyols having an $(P_1)_a(P_2)_b(P_1)_a$ structure such as Pluronic® F38, L44, P65, F68, F88, L92, P103, P104, P105, F108, L122, and F127, as well as the reverse Pluronic® R series $(P_2)_a(P_1)_b(P_2)_a$ structure such as Pluronic® 17R2 and 25R8. Other miscellaneous materials include propyleneoxide, urea, triethanolamine, alkylphenol ethoxylates (Iconol series), and linear alcohol alkoxyates (Plurafac series).

Additives affect the viscosity of the compositions differently depending upon the nature of the additive and its concentration. Some additives will affect the initial or final viscosity, whereas others will affect the temperature range of the viscosity response, or both.

Potassium chloride and acetamide MEA are two examples of additives which decrease the final viscosity of the composition (see Example 30). KCl (0.25%) added to a 1 wt% reversibly gelling polymer composition reduces the viscosity by about 3000 cps. See Figure 6. The humectant, acetamide MEA, lowers the viscosity of a 1 wt% solution by approximately 1,500 cps (see Figure 7).

Glycerin, ethanol and dimethicone copolymer have been shown to affect the temperature range over which the viscosity response occurs. Glycerin shifts the transition temperature to a slightly lower range from an initial 24-34°C to about 24-30°C, but does not affect the final viscosity (see Example 44). The effect of ethanol on

the viscosity is different at different concentration levels. At 5 wt% and 10 wt% added ethanol, the transition temperature is shifted to lower ranges, e.g., 24-29°C and 20-29°C, respectively. At 20 wt% added ethanol, the composition not only exhibits a lowering of the transition temperature, but also a marked increase in initial and final viscosity. See Figure 8. Dimethicone copolymer (1 wt%) also changed the transition temperature, but in this instance the transition temperature range was raised to 28-41°C. Thus, proper selection of additives permits the formulator to adjust the transition temperature to various ranges.

Those skilled in the art will appreciate that the polymer network compositions of the present invention may be utilized for a wide variety of cosmetic and personal care applications. To prepare a cosmetic composition, an effective amount of cosmetically active agent(s) which imparts the desirable cosmetic effect is incorporated into the reversibly gelling polymer network composition of the present invention. Preferably the selected agent is water soluble, which will readily lend itself to a homogeneous dispersion through out the reversibly gelling polymer network composition; however, the polymer network has been demonstrated to significantly solubilize or suspend hydrophilic agents in order to improve formulation homogeneity (see Example 36). It is also preferred that the agent(s) is nonreactive with the polymer network composition. For materials which are not water soluble, it is also within the scope of the invention to disperse or suspend powders or oil (lipophilic materials) throughout the polymer network composition. It will also be appreciated that some applications may require a sterile environment. It is contemplated as within the scope of the invention that the reversibly gelling polymer network compositions of the present invention may be prepared under sterile conditions. An additional feature of the reversibly gelling polymer composition is that it is prepared from constituent polymers that have known accepted toxicological profiles.

The poloxamer:poly(acrylic acid) polymer network has been evaluated under Good Laboratory Practice (GLP) standard protocols known in the art for toxicity in animal models and found to exhibit no toxic effects. The results of the toxicity study

are summarized in the following Table 1. The non-toxicity of the polymer network makes it an ideal candidate for use in cosmetic compositions.

Table 1. Toxicity data for 6% poloxamer:poly(acrylic acid) solution at pH 7.

Reaction Tests	Mode of Testing	Results
Skin sensitization	guinea pig - topical	not a sensitizer
Eye irritation	rabbit - eye instillation	negative
Primary dermal irritation	rabbit - topical	very slight edema (1 on a scale of 1-8)
Acute dermal toxicity	rat - single dose (2g/kg)	no toxicity
Acute oral toxicity	rat - single dose (5g/kg)	no toxicity
AMES test		negative

Exemplary cosmetic and personal care applications, for which the reversibly gelling polymer network composition may be used include, but are not limited to, baby products, such as baby shampoos, lotions, powders and creams; bath preparations, such as bath oils, tablets and salts, bubble baths, bath fragrances and bath capsules; eye makeup preparations, such as eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover and mascara; fragrance preparations, such as colognes and toilet waters, powders and sachets; noncoloring hair preparations, such as hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations such as hair dye, hair tints, hair shampoos, hair color sprays, hair lighteners and hair bleaches; makeup preparations such as face powders, foundations, leg and body paints, lipstick, makeup bases, rouges and makeup fixatives; manicuring preparations such as basecoats and undercoats, cuticle softeners, nail creams and lotions, nail extenders, nail polish and enamel, and nail polish and enamel remover; oral hygiene products such as dentrifices and mouthwashes; personal cleanliness, such as bath soaps and detergents, deodorants, douches and feminine hygiene products; shaving preparations such as aftershave lotion, beard softeners, men's talcum, shaving cream, shaving soap and preshave lotions; skin care preparations such as cleansing preparations, skin antiseptics, depilatories, face and

neck cleansers, body and hand cleansers, foot powders and sprays, moisturizers, night preparations, paste masks, and skin fresheners; and suntan preparations such as suntan creams, gels and lotions, indoor tanning preparations.

Preparation of the above-named cosmetic compositions and others may be accomplished with reference to any of the cosmetic formulation guidebooks and industry journals which are available in the cosmetic industry. These references supply standard formulations which may be modified by the addition or substitution of the reversible viscosifying polymer network of the present invention into the formulation. Suitable guidebooks include Cosmetics and Toiletries Magazine, Vo. 111 (March, 1996); Formulary: Ideas for Personal Care, Croda, Inc., Parsippany, NJ (1993); and Cosmeticon: Cosmetic Formulary, BASF, which are hereby incorporated in their entirety by reference.

The cosmetic composition may be in any form. Suitable forms include but are not limited to lotions, creams, sticks, roll-on formulations, mousses, aerosol sprays, pad-applied formulations, and film-forming formulations.

As those skilled in the art will appreciate, the foregoing list is exemplary only. Because the reversibly gelling polymer network composition of the present invention is suited for application under a variety of physiological conditions, a wide variety of cosmetically active agents may be incorporated into and administered from the polymer network composition. In addition to the poloxamer:poly(acrylic acid) polymer network, additional cosmetically acceptable carriers may be included in the composition, such as by way of example only, emollients, surfactant, humectants, powders and other solvents. By way of example only, the cosmetic composition also may include additional components, which serve to provide additional aspects of the cosmetic affect or to improve the stability and/or administration of the cosmetic. Such additional components include, but are not limited to, preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, antiperspirants, antiseptics, antistatic agents, astringents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents,

conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture
5 barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators,
10 thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances. Suitable materials which serve the additive functions listed here are well known in the cosmetic industry. a listing of the additive function and materials suitable for incorporation into the cosmetic composition may be found in Appendix A, which is appended hereto at the end of the specification. Further information may be obtained
15 by reference to The Cosmetic Bench Handbook, Cosmetics & Toiletries, C.C. Urbano, editor, Allured Publ. Corp., 1996, which is hereby incorporated in its entirety by reference.

A brief description of some preferred additives and cosmetically active agents follows. The compositions of the invention include a safe and effective amount of a
20 cosmetically active agent. "Safe and effective", as it is used herein, means an amount high enough to significantly positively modify the condition to be treated or the cosmetic effect to be obtained, but low enough to avoid serious side effects.

Preservative can be desirably incorporated into the cosmetic compositions of the invention to protect against the growth of potentially harmful microorganisms. Suitable
25 preservatives include, but are not limited to, alkyl esters of parahydroxybenzoic acid, hydantoin derivatives, parabens, propionate salts, triclosan tricarbonyl ether, tea tree oil, alcohols, farnesol, farnesol acetate, hexachlorophene and quaternary ammonium salts, such as benzalkonium, and a variety of zinc and aluminum salts. Cosmetic chemists are familiar with appropriate preservatives and may select that which provides the

required product stability. Preservatives are preferably employed in amounts ranging from about 0.0001 % to 2 % by weight of the composition.

Emollients can be desirably incorporated into the cosmetic compositions of the invention to provide lubricity to the formulation. Suitable emollients may be in the form of volatile and nonvolatile silicone oil, highly branched hydrocarbons and synthetic esters. Amounts of emollients may be in the range of about 0.1-30 wt%, and preferably about 1-20 wt%. By way of example only, suitable silicones include cyclic or linear polydimethylsiloxanes, polyalkylsiloxanes, polyalkylarylsiloxanes and polyether siloxanes. By way of example only, suitable ester emollients include alkenyl esters of fatty acids, polyhydric alcohols, such as ethyleneoxide mono and di-fatty acid esters, polyethyleneoxide and the like, ether-esters, such as fatty acid esters of ethoxylated fatty alcohols, wax esters, such as beeswax, spermaceti, myristyl myristate and stearyl stearate, and sterol esters such as cholesterol fatty acids.

A variety of oily emollients may be employed in the compositions of this invention. These emollients may be selected from one or more of the following classes:

1. Triglyceride esters such as vegetable and animal fats and oils. Examples include castor oil, cocoa butter, safflower oil, cottonseed oil, corn oil, olive oil, cod liver oil, almond oil, avocado oil, palm oil, sesame oil, squalene, Kikui oil and soybean oil;
2. Acetoglyceride esters, such as acetylated monoglycerides;
3. Ethoxylated glycerides, such as ethoxylated glyceryl monostearate;
4. alkyl esters of fatty acids having 10 to 20 carbon atoms, such as, methyl, isopropyl, and butyl esters of fatty acids, and including hexyl laurate, isohexyl laurate, isohexyl palmitate, isopropyl palmitate, decyl oleate, isodecyl oleate, hexadecyl stearate, decyl stearate, isopropyl isostearate, diisopropyl adipate, diisohexyl adipate, dihexyldecyl adipate, diisopropyl sebacate, lauryl lactate, myristyl lactate, and cetyl lactate;
5. Alkenyl esters of fatty acids having 10 to 20 carbon atoms, such as oleyl myristate, oleyl stearate, and oleyl oleate and the like;
6. Fatty acids having 10 to 20 carbon atoms, such as pelargonic, lauric, myristic, palmitic, stearic, isostearic, hydroxystearic, oleic, linoleic, ricinoleic, arachidic, behenic, and erucic acids and the like;
7. Fatty alcohols having 10 to 20 carbon atoms, such as, lauryl, myristyl, cetyl, hexadecyl, stearyl, isostearyl, hydroxystearyl, oleyl,

ricinoleyl, behenyl, erucyl, and 2-octyl dodecanyl alcohols are examples of satisfactory fatty alcohols and the like; 8. Fatty alcohol ethers, such as ethoxylated fatty alcohols of 10 to 20 carbon atoms including the lauryl, cetyl, stearyl, isostearyl, oleyl, and cholesterol alcohols, having attached thereto from 1 to 50 propylene oxide groups; 9. Ether-esters such as fatty acid esters of ethoxylated fatty alcohols; 10. lanolin and derivative, such as lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin, ethoxylated lanolin alcohols, ethoxylated cholesterol, propoxylated lanolin alcohols, acetylated lanolin alcohols, lanolin alcohols linoleate, lanolin alcohols ricinoleate, acetate of lanolin alcohols ricinoleate, acetate of ethoxylated alcohols-esters, hydrogenolysis of lanolin, ethoxylated hydrogenated lanolin, ethoxylated sorbitol lanolin, and liquid and semisolid lanolin absorption bases and the like; 11. Polyhydric alcohol esters, such as, ethylene glycol mono and di-fatty acid esters, diethylene glycol mono- and di-fatty acid esters, polyethylene glycol (200-6000) mono- and di-fatty acid ester, propylene glycol mono- and di-fatty acid esters, polypropylene glycol 2000 monooleate, polypropylene glycol 2000 monostearate, ethoxylated propylene glycol monostearate, glyceryl mono- and di-fatty acid esters, polyglycerol polyfatty esters, ethoxylated glyceryl monostearate, 1,2-butyleneglycol monostearate, 1,2-butyleneglycol distearate, polyoxyethylene polyol fatty acid ester, sorbitan fatty acid esters, and polyoxyethylene sorbitan fatty acid esters are satisfactory polyhydric alcohol esters; 12. Waxes such as beeswax, spermaceti, myristyl myristate, stearyl stearate; 13. Beeswax derivatives, e.g., polyoxyethylene sorbitol beeswax; 14. Vegetable waxes including carnauba and candelilla waxes; 15. Phospholipids such as lecithin and derivatives; 16. Sterol including cholesterol and cholesterol fatty acid esters; 17. Amides such as fatty acid amides, ethoxylated fatty acid amides, solid fatty acid alkanolamides.

Humectants may be added to the composition to increase the effectiveness of the emollient, to reduce scaling, to stimulate removal of built-up scale and improve skin feel. By way of example only, suitable humectants include polyhydric alcohols, such as glycerol, polyalkylene glycols, alkylene polyols, their derivatives, propyleneoxide, dipropyleneoxide, polypropyleneoxide, polyethyleneoxide, sorbitol, hydroxypropyl

sorbitol, hexylene glycol, 1,3-butylene glycol, 1,2,6-hexanetriol, ethoxylated glycerol, propoxylated glycerol and the like. The amount of humectant may be in the range of about 0.5-30 wt% and preferably between 1-15 wt%.

In topical skin care applications, a variety of active substances may be advantageously employed. by way of example, only suitable active agents which may be incorporated into the cosmetic composition include anti-aging active substances, anti-wrinkle active substances, hydrating or moisturizing or slimming active substances, depigmenting active substances, substances active against free radicals, anti-irritation active substances, sun protective active substances, anti-acne active substances, firming-up active substances, exfoliating active substances, emollient active substances, and active substances for the treating of skin disorders such as dermatitis and the like.

By way of example only, in the case of hydration, one or more moisturizers may be used, such as glycerin or urea, in combination with one or more precursor agents for the biosynthesis of structural proteins, such as hydroxyproline, collagen peptides, and the like.

By the way of example only, in case of slimming, at least one ketolytic agent or an alpha-hydroxyacid such as a salicylic acid or 5-n-octanoic acid may be used in combination with at least one liporegulating agent such as caffeine.

By way of example only, in the case of depigmentation, at least one keratolytic agent is used in combination with a depigmenting agent such as hydroquinone, tyrosinase inhibitor (kolic acid), kojic acid and sodium metabisulfite and the like.

By way of example only, in the case of protection against free radical agents, vitamin E (against CO_2 radicals), superoxide dismutase (against O_2 free radicals) and sugar and caffeine (against OH free radicals).

By way of example only, in the case of anti-aging, moisturizers, sunscreens, alpha-hydroxyacids, salicylic acid or surface restructuring agents may be used in combination with enzymes for the repair of DNA, vascular protective agents or phospholipids rich in oligoelements and polyunsaturated fatty acids.

By way of example only, in the case of anti-acne agents, keratolytics, such as salicylic acid, sulfur, lactic acid, glycolic, pyruvic acid, urea, resorcinol and N-acetylcysteine, and retinoids, such as retinoic acid and its derivatives may be used.

By way of example only, in the case of anti-inflammation, non-steroidal anti-inflammatory agents (NSAIDS) may be used, such as propionic acid derivatives, acetic acid, fenamic acid derivatives, biphenylcarboxylic acid derivatives, oxicams, including but not limited to aspirin, acetaminophen, ibuprofen, naproxen, benoxaprofen, flurbiprofen, fenbufen, ketoprofen, indoprofen, piroprofen, carprofen, and bucloxic acid and the like.

By way of example only, in the case of antibiotic and antimicrobials may be included in the composition of the invention. Antimicrobial drugs preferred for inclusion in compositions of the present invention include salts of β -lactam drugs, quinolone drugs, ciprofloxacin, norfloxacin, tetracycline, erythromycin, amikacin, triclosan, doxycycline, capreomycin, chlorhexidine, chlortetracycline, oxytetracycline, clindamycin, ethambutol, hexamidine isethionate, metronidazole, pentamidine, gentamicin, kanamycin, lineomycin, methacycline, methanamine, minocycline, neomycin, netilmicin, paromomycin, streptomycin, tobramycin, miconazole and amantadine and the like.

By way of example only, in the case of sunscreen protection, suitable agents include 2-ethylhexyl p-methoxycinnamate, 2-ethylhexy N,N-dimethyl-p-aminobenzoate, p-aminobenzoic acid, 2-phenyl p-methoxycinnamate, 2-ethylhexyl octocrylene, oxybenzone, homomenthyl salicylate, octyl salicylate, 4,4'-methoxy-t-butylidibenzoylmethen, 4-isopropyl dibenzoylmethane, 3-benzylidene camphor, 3-(4-methylbenzylidene) camphor, titanium dioxide, zinc oxide, silica, iron oxide, and mixtures thereof and the like. The sunscreens disclosed therein have, in a single molecule, two distinct chromophore moieties which exhibit different ultra-violet radiation absorption spectra. One of the chromophore moieties absorbs predominantly in the UVB radiation range and the other absorbs strongly in the UVA radiation range. These sunscreens provide higher efficacy, broader UV absorption, lower skin penetration and longer lasting efficacy relative to conventional sunscreens. Generally,

the sunscreens can comprise from about 0.5% to about 20% of the compositions useful herein. Exact amounts will vary depending upon the sunscreen chosen and the desired Sun Protection Factor (SPF). SPF is a commonly used measure of photoprotection of a sunscreen against erythema.

5 By way of example only, in the case of sunless tanning agents include, dihydroxyacetone, glyceraldehyde, indoles and their derivatives, and the like.

The composition may include cleansing surfactants. Cleansing surfactants are cationic, anionic, amphoteric or non-ionic surfactants which are water-soluble and produce a consumer-acceptable amount of foam. Non-ionic surfactants are well-known
10 materials and have been used in cleansing compositions. Therefore, suitable non-ionic surfactants include, but are not limited to, compounds in the classes known as alkanolamides, block copolymers of ethylene and propylene, ethoxylated alcohols, ethoxylated alkylphenols, alkyl polyglycosides and mixtures thereof. In particular, the non-ionic surfactant can be an ethoxylated alkylphenol, i.e., a condensation product of
15 an alkylphenol having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with ethylene oxide, the ethylene oxide being present in an amount equal to at least about 8 moles ethylene oxide per mole of alkylphenol. Examples of compounds of this type include nonylphenol condensed with about 9.5 moles of ethylene oxide per mole of phenol;
20 dodecylphenol condensed with about 12 moles of ethylene oxide per mole of phenol; dinonylphenol condensed with about 15 moles of ethylene oxide per mole of phenol; octylphenol condensed with about ten moles of ethylene oxide per mole of phenol; and diisooctyl phenol condensed with about 15 moles of ethylene oxide per mole of phenol.

A wide variety of acids, bases, buffers, and sequestrants can be utilized to adjust
25 and/or maintain the pH and ionic strength of the compositions useful in the instant invention. Materials useful for adjusting and/or maintaining the pH and/or the ionic strength include sodium carbonate, sodium hydroxide, hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, sodium acetate, sodium hydrogen phosphate, sodium dihydrogen phosphate, citric acid, sodium citrate, sodium bicarbonate, triethanolamine,
30 EDTA, disodium EDTA, tetrasodium EDTA, and the like.

The polymer network may be useful as a solubilization agent in cosmetic and personal care applications. A self-assembling system comprising the reversibly gelling polymer network exhibits thermogelation, pH sensitivity, and the ability to solubilize hydrophobic agents in aqueous media. When poloxamer is copolymerized with
5 poly(acrylic acid) (PAA) according to the invention, the resulting copolymer network is bioadhesive and can be applied in a number of therapies. The materials described in this invention combine "reverse" thermoviscosification mucoadhesion, solubilization of hydrophobic and difficult to manage moieties, easy formulation, and protection of agents from degradation to provide a superior medium for cosmetic and personal care
10 products.

The reversible viscosification of the polymer network at elevated temperatures makes the materials idea for use as thickening agents in cosmetic and personal care products at any temperature above the transition. Another use of the "thickening" of solutions containing the polymer network as a thickener supplement in emulsions.
15 Currently, emulsifiers are often negatively affected by increased temperatures. An additive with reverse thermal viscosification properties, however, would react in exactly the opposite way, increasing its ability to emulsify as it gained three-dimensional structure upon heating above its transition temperature.

In the applications where the reversibly gelling polymer composition can act as
20 a surfactant, the polymer network will have the ability to act as a primary emulsifier without any (or with very little) addition of traditional surfactant. The responsive polymer network will also act as a stabilizer for oil soluble ingredients that would conventionally need to be solubilized by oils in formulation. The hydrophobic portion of the polymer network (PPO) forms domains which act as reservoirs for an oil-soluble
25 or hydrophobic additive, such as an oil droplet, as is illustrated in Figure 9. These two features of the material of the invention would enable it to be used as a base in a cosmetic formulation that would be non-greasy due to lack of oils, such as petrolatum and mineral oil. The increase in viscosity above the transition temperature adds structure and yield value to the water phase and results in a highly stable emulsion.

Thus, poloxamer:poly(acrylic acid) polymer network compositions are valuable materials in the formulation of cosmetic and personal care products. In particular, they may be useful as rheology modifiers, provide a cushioning effect on the skin, offer barrier properties and controlled release of actives. In addition, the polymer
5 composition may serve as a surfactant and is compatible with most ingredients used in the cosmetic industry.

The above properties of the poloxamer:poly(acrylic acid) polymer network provides a cosmetic composition that spreads evenly and smoothly and which leaves a lubricious feel to the skin. A sensory evaluation was conducted with seven random
10 volunteers in order to determine the sensory effect of a cream formulation on the skin. An oil-free cosmetic formulation was prepared substantially as set forth in Example 33(b) and was compared to Nivea Oil Free, a product of Beiersdorf of Germany. Volunteers placed unmarked samples on the skin and evaluated the formulation based upon its feel and texture. The samples were rated on a scale of 1 (bad) to 5 (good).
15 The oil-free cosmetic formulation of the present invention scored equally to the Nivea Oil Free moisturizing product. Both samples scored a 3.5 on the rating scale.

The observed thermal behavior of the reversibly gelling polymer network suggests that the increase in viscosity is due to aggregation of the hydrophobic portion of the poloxamer at the transition temperature which, because of bonding with the
20 poly(acrylic acid) component, serve as temporary cross-links which physically bridge adjacent chains of poly(acrylic acid) to provide a viscous gel-like extended polymer structure. The aggregation process may be understood as occurring as shown in Figure 10, in which a backbone 20 represent poly(acrylic acid), a thin band 24 represents the hydrophobic poly(propylene) glycol region of the poloxamer and a thick band 26
25 represents the hydrophilic poly(ethylene glycol) region of the poloxamer. Below the transition temperature, the polymer network is randomly arranged, as is shown in Figure 10(a). At or above the transition temperature, the hydrophobic regions 24 associate to form aggregations or micelles 28, as is shown in Figure 10(b). The association increases the effective molecular weight of the polymer network
30 composition with the corresponding increase in viscosity.

A general method of making the poloxamer:PAA polymer network compositions of the present invention comprises solubilization of the poloxamer in acrylic acid monomer, followed by polymerization of the monomer to PAA. Polymerization may be accomplished by addition of a polymerization initiator or by irradiation techniques.

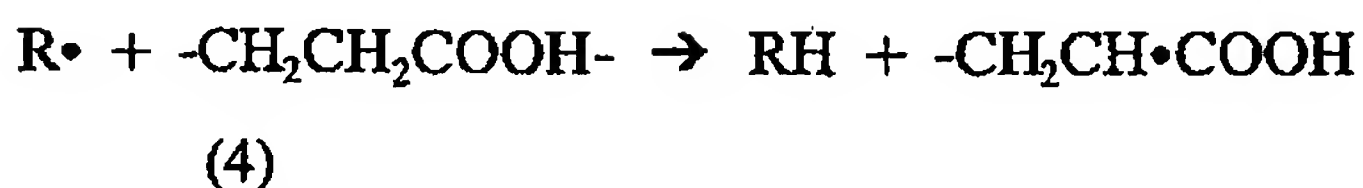
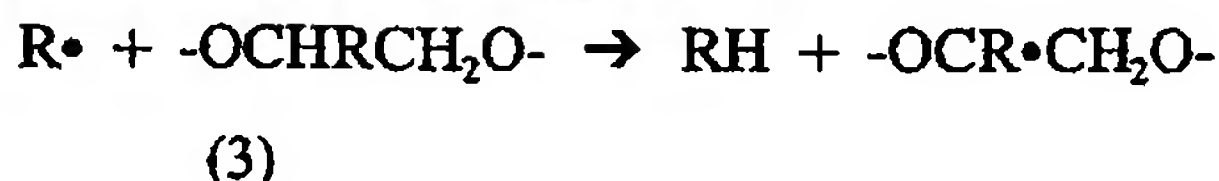
5 The initiator may be a free radical initiator, such as chemical free radical initiators and UV or gamma radiation initiators. Conventional free radical initiators may be used according to the invention, including, but in no way limited to ammonium persulfate, benzoin ethyl ether, benzyl peroxide, 1, 2'-azobis(2,4-dimethylpentanitrile) (Vazo 52) and azobisisobutyronitrile (AIBN). Initiation may also be accomplished using cationic
10 or ionic initiators. many variations of this method will be apparent to one skilled in the art and are contemplated as within the scope of the invention. For example, the poloxamer component may be dissolved in an acrylic acid/water mixture instead of pure monomer. It may be desirable to remove unreacted monomer and/or free poloxamer from the resultant polymer network. This may be accomplished using conventional
15 techniques, such as, by way of example, dialysis or sohxlet extraction.

Without intending to be bound by a particular mechanism or structure, the following scheme represents a possible chemical mechanism for the formulation of the system here described. These mechanisms are presented by way of explanation and are no way limiting of the invention. It is contemplated that these or other mechanistic
20 routes may in fact occur in the formation of the polymer network of the present invention.

I. Initiation



25 II. Hydrogen Abstraction



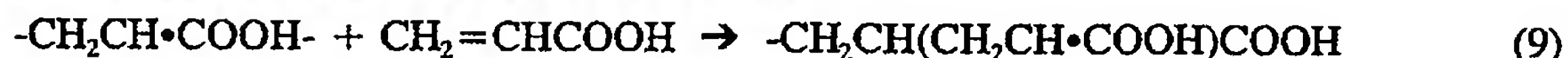
30 III. Chain Transfer



IV. Propagation



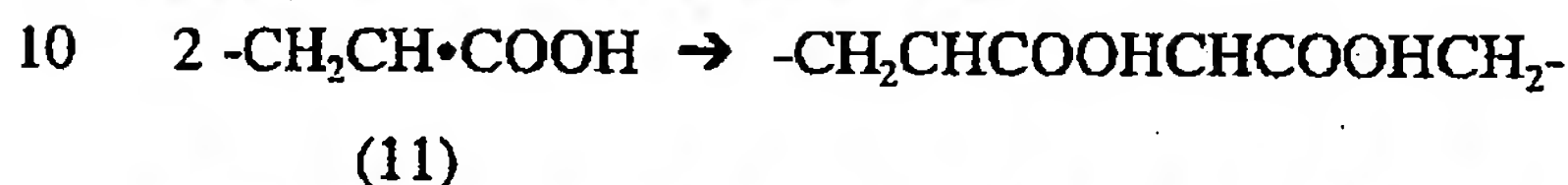
5 V. Side Chain Branching Off AA Backbone



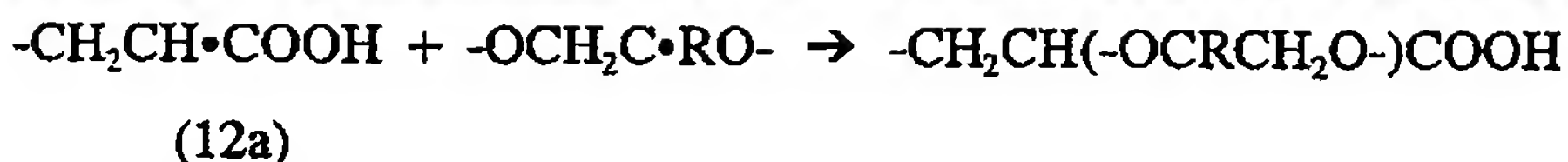
VI. AA Branching Off Poloxamer Backbone



VII. Homogenous Termination



VIII. Heterogenous Termination with Bonding of Pluronic to PAA



15

The scheme for bonding of poloxamer to acrylic acid may involve initiation (Eq. 1), hydrogen abstraction from the propylene or ethylene moiety of the poloxamer (Eq. 3), and attachment to acrylic acid via addition across the unsaturated bond (Eq. 10). Propagation (Eq. 8) leads to the final PAA.

20

Alternatively, the mechanism may proceed by initiation according to Eqs. (1) and (2), propagation to form PAA (Eq. 8), a chain transfer reaction to generate a reactive poloxamer moiety (Eq. 5), followed by addition of the reactive poloxamer moiety to the unsaturated bond of acrylic acid (Eq. 10) and subsequent propagation of the PAA chain.

25

Thus, the polymer network may include a plurality of poly(acrylic acid) units bounded to a single poloxamer unit, or alternatively, a plurality of poloxamer units bound to a single PAA backbone. Combinations of these alternatives are also a possibility.

30

Reverse phase polymerization may be used to prepare polymer network beads by dispersion of the poloxamer and acrylic acid monomer mixture in a nonpolar solvent

such as hexane or heptane. The aggregating polymer/monomer solution is dispersed with agitation in the nonpolar solvent in order to suspend droplets of the solution. Polymerization of the monomer is initiated by conventional means (i.e., addition of an initiator or irradiation) in order to polymerize the monomer and form responsive polymer network beads. See U.S.S.N. 08/276,532 filed July 18, 1995 and entitled "Useful Responsive Polymer Gel Beads" for further information on the preparation of polymer gel beads, herein incorporated by reference. Such a method may be particularly desirable to provide a heat sink for the heat generated in the exothermic polymerization reaction.

The polymer network complexes and aqueous gelling solutions of the present invention may be understood with reference to the following examples, which are provided for the purposes of illustration and which are in no way limiting of the invention.

Example 1. This example describes the synthesis of a polymer network and an aqueous responsive polymer network solution prepared using a triblock polymer of poly(ethyleneoxide) and poly(propyleneoxide), Pluronic® F27 polyol, and poly(acrylic acid). This example also characterizes the gelation and the physical properties of the resultant polymer network.

Synthesis. Block copolymer of poly(propyleneoxide) (PPO) and poly(ethyleneoxide) (PEO) having triad ABA structure $(PEO)_A(PPO)_B(PEO)_A$ (Pluronic® F127 NF polyol, Poloxamer 407 NF polyol, where "F" means Flakes, "12" means $12 \times 300 = 3600$ - MW of the PPO section of the block copolymer, "7" PEO in the copolymer is 70 wt%, and nominal molecular weight is 12,600) from BASF (3.0 g) was dissolved in 3.0 g acrylic acid (Aldrich). This represents a substantially 1:1 weight ratio of Pluronic® F127 polyol and poly(acrylic acid). The solution was deaerated by N_2 bubbling for 0.5 h and following addition of 100 ml of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer.

Viscosity measurements. A known amount of the resultant polymer was suspended in 100 ml deionized water into which NaOH was added. Following swelling

for 3 days while stirring, the pH of the resulting fine suspension was adjusted to 7. Samples of 15 ml each were taken, and pH in each vial was adjusted to desired value by addition of 1 M HCl or NaOH. Samples were then kept overnight and their viscosities were measured at different temperatures using Brookfield viscometer using either an
5 SC4-18 or an SC4-25 spindle.

A control experiment was done with a physical blend of Pluronic® F127 polyol and poly(acrylic acid) (MW 450,000) available from Aldrich. Pluronic® F127 polyol and poly(acrylic acid) were dissolved together in deionized water at 1 wt% total polymer concentration and the resultant solution was adjusted to pH 7, stirred and kept
10 in refrigerator. The responsiveness of the polymer network composition and the physical blend to temperature and pH is illustrated in figs. 1, 11, and 12. Figs. 1 and 2 clearly demonstrate that the synthetic route outlined above resulted in a polymer network system that is sensitive to pH and temperature of the environment. Note that the liquid-gel transition is very sharp, occurring over a very small temperature change
15 of pH (see Figure 11). Figure 12 is a viscosity vs. temperature graph comparing the gelling characteristics of the responsive polymer network composition and the physical blend. The blend prepared by physically mixing the triblock PEG/PPG/PEG polymer and poly(acrylic acid) did not exhibit viscosifying effect either as a function of temperature or pH.

20 It was generally observed that 0.5 - 5 wt% polymer network compositions made of Pluronic® F127 polyol and poly(acrylic acid) viscosify at temperatures of around 30°C and higher if pH is adjusted to 6 or higher. The gelling effect was observed in polymer network compositions standing 3 months or longer. Repeated heating and cooling of responsive polymer network compositions did not cause deterioration of the
25 polymer network or the gelling effect. Solutions of either Pluronic® F127 polyol or poly(acrylic acid) (1-5 wt% in water, adjusted to pH 6 or higher) or physical blends of the two lacked the reverse thermal gelling effects found for polymer network compositions.

Example 2. this example describes a standard operating procedure for the
30 manufacture of the reversible gelling polymer network.

The procedure is based upon a 50 liter production. A NaOH solution was prepared by dissolving 131.8 g NaOH pellets in 131.8 mL DI water (50% solution). The NaOH was allowed to dissolve completely. The NaOH solution will be used to convert a percentage of the acrylic acid to sodium acrylate in situ. Acrylic acid monomer (4 kg) is charged into a monomer feed tank and agitated at 250 rpm. NaOH is added slowly. The precipitate formed as the acrylic acid is neutralized to sodium acrylate is allowed to dissolve. Pluronic® F 127 (3.5 kg) is slowly added to the monomer feed tank. Pluronic® F127 is dissolved under continued agitation. Norpar 12 (a refined C-12 alkane) is added to the reaction vessel (37 L). The mixture is agitated at 100 rpm. Stabilizer solution of Ganex V-126 is prepared in 2L Norpar 12 and added to the reactor under agitation.

A reaction vessel was degassed using a nitrogen sparge introduced from the bottom of reactor and was continued throughout the reaction. Initiator (13.63 g Lauryl peroxide and 4.23 g Vazo 52 in 0.7 kg acrylic acid monomer) is introduced into the monomer solution. the monomer solution was transferred to the reaction vessel. Agitation was increased to 150 rpm. Nitrogen sparging continued for an additional 20 minutes, and then heating began. heating began at a rate of 0.5 -1.0°C/min up to 75°C. The reaction began to exotherm at about 45-50°C and is allowed to continue without cooling until a maximum is reached. It is then cooled to 75°C using forced cooling. The reaction continued for 12 hours and was then cooled to 35°C. The slurry was transferred into pails and the polymer beads were allowed to settle.

The slurry was filtered through Buchner Funnels with filter paper (11 µm pore size) until the bulk of the Norpar had been removed from the beads. The beads were washed three times with heptane. The filtered beads were transferred to a Pyrex drying tray and spread on the tray in a uniform layer. The beads were dried under vacuum for 4 hours at 40-50°C. The dried beads were analyzed as follows.

Elemental analysis. The elemental analysis was performed by Quantitative Technologies, Inc., Whitehouse, NJ using a Perkin Elmer 2400 CHN Elemental Analyzer. Analysis provided C (52.49%), H (7.50%), N (<0.05%), the balance assumed to be oxygen (39.96%).

Thermal Gravimetric Analysis (TGA). The TGA method was performed by Massachusetts Material Research, Inc., West Boylston, MA using a Dupont TGA model 295. The assay was run using a temperature ramp from 30 to 500°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The data was analyzed using the first derivative of the curve and using maxima and minima to mark transitions. The moisture content was also calculated in this manner. The first derivative yielded three maxima. The first transition (moisture) was 3.0% by weight, the second transition was 14.0% by weight, and the third was 67.02% by weight. Residue (15.98%) remained.

Molecular weight determination by gel permeation chromatography (GPC). The molecular weight was determined by GPC on a Hewlet Packard 1100 Liquid Chromatography system with a Viscotech T60 Triple Detector system. Three Waters Ultrahydrogel columns, 1000, 500 and 250 Å, were used for the separation. The mobile phase was 0.1 M NaNO₃ and 0.01 M K₂HPO₄ salt solution, pH adjusted with phosphoric acid to a pH of 8.0 ± 0.1. the flow rate for the separation was 0.9 mL/min. The column temperature was maintained at 15°C. The injection volume for the assay was 50 µL. A PEG molecular weight standard of 23,000 Daltons was used to align the detectors. The result for the assay were:

M_n: 341,700 Daltons

M_p: 1,607,000 Daltons

M_w: 2,996,000 Daltons

Free poloxamer determination by GPC. The amount of free (unbound) poloxamer in the polymer matrix was determined using the above GPC method and comparing the poloxamer peaks to that of a standard poloxamer solution. The typical result is approximately 18-22% free poloxamer by weight.

The effect of both the bonded and non-bonded poloxamer on the gelation properties of the responsive polymer network has been determined by extraction of the non-bonded poloxamer from the material. Such extraction studies have established that the graft co-polymer alone exhibits the characteristic reverse thermal gelation of the composition; however, the presence of non-bonded poloxamer component modulates

the gelation process. The non-bonded poloxamer component can affect the temperature of transition (from liquid to gel) and the degree of transition and assists in a more controlled and reproducible transition.

Bound poloxamer determination by ethylene oxide (EO) titration. The EO

5 titration was performed as follows. A 5 gm sample of the product polymer was extracted in dichloroethane for three hours at reflux temperatures. The solid is removed and dried under a vacuum for 12 hours at room temperature. The dry material is then analyzed using ASTM method D 2959-95, "Standard Test Method for Ethylene Oxide Content". The amount of EO in the sample is related to the amount of poloxamer
10 bound to the polymer. The typical result is approximately 15% by weight of EO.

The relative amount of free poloxamer may be varied dependent upon the relative proportions of starting materials and the method of polymerization. Although the residual solids presumably contain only poloxamer which is bounded to the poly(acrylic acid), i.e., a graft co-polymer, the material still shows strong
15 viscosification when it is neutralized and dissolved in water. However, the temperature of viscosification is increased substantially and the degree of viscosification per gram of total solids is increased by removal of free poloxamer. Thus, the free poloxamer plays a role in modifying the extent and temperature of viscosification. The poloxamer undergoes conformational changes and changes to the critical micelle concentration as a
20 function of temperature. The poloxamer will change from an open, non-aggregated form to a micellular, aggregated form with changes in temperature.

Residual acrylic monomer determination by gas chromatography (GC). The residual acrylic acid monomer was determined by GC analysis using a Hewlet Packard GC 5890A, using a HP-FFDAP-TPA 10 m x 0.52 mm x 1 μ m column. The sample
25 was extracted and run in methanol. Using an internal standard ratio, the sample was compared to a one point calibration. The typical results for this assay were below 70 ppm acrylic acid monomer.

Residual Norpar solvent by GC. The residual Norpar in the sample was determined by GC using the above method and comparing the Norpar peaks to that of a
30 standard. The typical results were below 1.5 wt%.

UV-vis spectrum. Optical clarity data of UV-vis spectrophotometer was obtained. A 1.0% solution in water was prepared and measured at 420 nm. Transmittance (%) was typically greater than 90%.

Differential scanning calorimetry (DSC). The DSC was performed by Massachusetts Material Research, Inc., West Boylston, MA using a temperature ramp from 30 to 350°C at 5°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The assay yielded one endothermic event at 265°C, typically 270 J/g.

Examples 3-9. These examples describe the synthesis of several reversible thermal gelling polymer networks prepared using a variety of poloxamers and poly(acrylic acid). The gelation and the physical properties of the resultant polymer network compositions are reported in Table 2.

Table 2

Example	Poloxamer	Poloxamer Composition	Polox- amer: PAA	Trans. Temp.	Comments
3	Pluronic® F88 Prill polyol	2400 MW PPO; 80 wt% PEO; nominal MW 11,400	1:1	48°C	viscosity response curve shown in Figure 13
4	Pluronic® F127 NF polyol	3600 MW PPO; 70 wt% PEO; nominal MW 12,600	1:1	30°C	pentaerythritol triallyl ether crosslink agent used
5	Pluronic® P104 polyol	3000 MW PPO; 40 wt% PEO; nominal MW 5,900	1:1	28°C	viscosity response curve shown in Figure 14
6	Pluronic® P123 polyol	3600 MW PPO; 30 wt% PEO; nominal MW 5,750	1:1	25°C	viscosity response curve shown in Figure 15
7	Pluronic® F127/ Pluronic® F108 polyol blend (1:1)	as above	1:1.7	42°C	polymer solid formed, dried; resolubilized in neutralizing solution
8	Pluronic® F88 polyol	as above	1:1.7	80°C	polymer solid formed, dried; resolubilizing in neutralizing solution
9	Pluronic® F127/ Pluronic® F88 polyol blend (1:1)	as above	1:1.7	85°C	polymer solid formed, dried; resolubilizing in neutralizing solution

Example 10. The following example demonstrates the effect of hydrophilic/hydrophobic ratio on the gelling temperature. Polymer network compositions were prepared from the following poloxamers shown in Table 3.

Table 3. Composition of Poloxamers Investigated.

triblock polyol polymer composition	MW of PPO block	wt% of PEO block
P103 (PEO) ₃₇ (PPO) ₅₆ (PEO) ₃₇	3250	50
P104 (PEO) ₂₅ (PPO) ₅₆ (PEO) ₂₅	3250	40
P105 (PEO) ₁₆ (PPO) ₅₆ (PEO) ₁₆	3250	30

Table 3 shows that in this series, the fraction of PEO is reduced when the molecular weight of the PPO block is kept constant. Linse (*Macromol.* 26:4437-4449 (1993)) report phase diagrams for these copolymers in water were calculated and it was shown that two-phase boundaries corresponding to the beginning of aggregation are almost unaffected by the molecular mass, given a constant PEO/PPO ratio, whereas these boundaries shifted to lower temperature as the PEO content of the polymer is reduced at constant mass. The strong dependence of the PEO/PPO ratio is a consequence of the differing solubilities of PEO and PPO in water at the elevated temperatures. Thus, one would suppose that aggregation that causes viscosification in the responsive polymer network composition should shift to lower temperature as PEO fraction decreases.

The poloxamer (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 20 min. and following addition of the 100:1 of freshly prepared saturated solution of ammonium persulfate in deionized water was kept at 70°C for 16 h resulting in a strong whitish polymer. A sample of the polymer obtained (0.4 g) was suspended in 40 ml deionized water into which NaOH was added. Suspended responsive polymer network particles were allowed to dissolve under constant stirring. The resulting 1 wt% polymer network solution were subjected to the

viscosity measurement at shear rate of 132 or 13.2 sec⁻¹ using a SC4-18 spindle. It can be seen from Figure 16 that, firstly, viscosity of the 1 wt% responsive polymer network solutions before viscosification (at 20-24°C) decreases in the series

(PEO)₃₇(PPO)₅₆(PEO)₃₇(F103) > (PEO)₂₅(PPO)₅₆(PEO)₂₅(F104) >

- 5 (PEO)₁₆(PPO)₅₆(PEO)₁₆(F105) and, secondly, the temperature at which gelation shifts from about 45°C for (PEO)₃₇(PPO)₅₆(PEO)₃₇ to about 35°C for (PEO)₂₅(PPO)₅₆(PEO)₂₅ and (PEO)₁₆(PPO)₅₆(PEO)₁₆. Both results are in excellent agreement with the theory set forth in Linse.

Example 11. The following example is related to release of and active agent
10 from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein hemoglobin from poloxamer:poly(acrylic acid) polymer network is described.

Synthesis. Pluronic® F127 (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 0.5 h and following addition of 100 Fl of
15 freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer. The resultant responsive polymer network obtained (5 g) was suspended in 95 ml deionized water into which NaOH was added. The resulting suspension was allowed to swell for 7 days.

Hemoglobin loading and release. A 5 wt% responsive polymer network
20 composition (3 g) was allowed to swell for 16 h in 10 ml of 0.25 mg/ml solution of human hemoglobin (Sigma) in deionized water adjusted to pH 8. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was
25 continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the hemoglobin-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 0.25 mg/ml hemoglobin solution. After the feed solution had been loaded into the cell,
30 the kinetic time commenced. Samples of the receiver phase was withdrawn from time

to time and their absorbance was measured spectrophotometrically at 400 nm. To calculate hemoglobin concentrations, corresponding calibration curves (absorbance in PBS versus hemoglobin concentration) were generated. The results of the kinetic experiment are presented in Figure 17. It can be seen that the rate of hemoglobin release from the polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in the polymer network at elevated temperatures (see Figure 1). The protein released from the polymer network composition still retained its native structure, as was determined by comparison of UV-vis spectra of release hemoglobin and natural hemoglobin.

Example 12. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein lysozyme from a polymer network is reported.

Lysozyme loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 1 mg/ml solution of chicken egg-white lysozyme (Sigma) and 1.5 mg/ml sodium dodecyl sulfate (Aldrich) in deionized water adjusted to pH 8.5. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the lysozyme-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 1 mg/ml lysozyme solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples were withdrawn and their absorbance measured spectrophotometrically at 280 nm. A calibration curve was prepared for lysozyme concentration ranging from 0 mg/ml to 0.5 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 18. It can be seen that the rate of lysozyme release from the responsive polymer network composition was substantially lowered at 37°C when

compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

In order to demonstrate the retention of the enzymatic activity of lysozyme, the lysozyme released from the responsive polymer network composition was assayed using
5 Micrococcus lysodeikticus cells and compared to that of original lysozyme. The enzymatic activity of lysozyme was the same, within the error of the assay (15%), as that of the original lysozyme. Control without lysozyme in presence of sodium dodecyl sulfate did not show any appreciable lysis of the cells.

Example 13. The following example is related to release of an active agent
10 from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of insulin from a responsive polymer network composition is reported.

Insulin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 15 h in 10 ml of 5 mg/ml solution of bovine Zr²⁺-insulin (Sigma) in deionized water adjusted to pH 7. The resulting mixture was well shaken
15 and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. the cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the insulin-loaded responsive polymer
20 network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 5 mg/ml insulin solution. After the feed solution had been loaded into the cell, the timing commenced. Samples were withdrawn and their absorbance was measured spectrophotometrically at 280 nm. A calibration curve was prepared for insulin concentration ranging from 0 mg/ml to 1.25
25 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 19. The rate of insulin release from responsive polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

Example 14. This example demonstrates the preparation of a sterile reversibly
30 gelling polymer network aqueous composition and the stability of the composition to

sterilization. The polymer network is prepared as described in Example 1, except that the composition is prepared at 2 wt% Pluronic® F127 polyol/poly(acrylic acid). After dissolution of the 2 wt% polymer network in water, the viscosity is measured. The composition then is sterilized by autoclaving at 121°C, 16 psi for 30 minutes.

- 5 Viscosity is determined after sterilization. The corresponding curves for viscosity (a) before and (b) after sterilization are shown in Figure 20 and establish that minimal change in the viscosity profile of the material has occurred with sterilization.

Examples 15-30. These examples show additives which may be used to affect the transition temperature overall viscosification of the polymer network composition.

- 10 A 1 wt% polymer network was prepared in deionized water at pH 7 in which a variety of additives were included in the composition. The effect of the additive was determined by generation of a Brookfield viscosification curve. Results are reported in Table 4.

Table 4.

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
15	1,2-methyl pyrrolidone (5)	I (1.8)	N
	Rhodapex CO-436 (2)	I (1.6)	N
	Dow Corning 190 (2)	I (5)	I (150)
	isopropyl alcohol (0.5)	I (3.1)	I (45)
20	Pluronic® L122 (1)	D (4.4)	D (13)
	Pluronic® F88 (1)	N	I (41)
	Tween 80 (0.5)	N	I (18)
	Germaben® II (1)	D (9)	I (100)
	Iconol NP-6 (1)	D (9)	I (500)
25	Plurafac C-17 (0.5)	I (5.2)	D (36)
	Dow Corning 193 (0.75)	I (4.1)	D (12)
	glycerin (5)	D (2)	N-

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
27	UC 50-HB 170/EO/PO random copolymer (0.5)	N	N
28	PVP K15 (1)	N	N
29	MAPTAC (1)	N	D (8)
30	potassium chloride (0.25)	N	D (34)

I = increase; D = decrease; and N = no change

Example 31. Because of the surfactant nature of the polymer network composition coupled with the gelation effect of the polymer network composition, it is possible to prepare formulations which are 100% water-based, but which are lubricous and thick.

Formulations including a nonionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 5.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Emulsifying Wax NF ¹	2.5
Mineral Oil	5.0

¹ Polowax available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains a nonionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Formulations including a cationic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 6.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Behentrimonium Methosulfate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Incroquat Behenyl TMS available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added and allowed to mix to homogeneity. This formulation contains a cationic surfactant and gives an emulsion that is fluid at room temperature but viscifies above 32°C.

Formulations including an anionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 7.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Cetearyl Phosphate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Crodafos CES available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains an anionic surfactant and gives an emulsion that is fluid at room temperature but viscifies above 32°C.

Example 32. Acne Medication: An oil-free, clear, anti-acne treatment is made by combining the following ingredients utilizing conventional mixing techniques:

Table 8.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Salicylic Acid	2.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
USP Purified Water	72.2

¹Germaben® II available from Sutton Laboratories

To one vessel, equipped with a Lightnin' Mixer with a 3 blade paddle prop, the full amount of USP Purified Water to 100% w/w is added. While maintaining the temperature, with moderate to vigorous mixing, the formula amount of Disodium EDTA, Citric Acid, DL-Panthenol, Glycerin, Salicylic Acid, and Germaben® II is added. These materials are allowed to dissolve at 50°C. After dissolution, the vessel is then cooled to 20°C. To another vessel, equipped with a high efficiency homogenizer, the formula amount of responsive polymer network is added. The responsive polymer network vessel is then cooled to 4°C. After cooling, while vigorously homogenizing, the contents of the first vessel is added to the second vessel, and allowed to mix to homogeneity.

The composition displays a flowable clear jelly appearance with excellent spreadability and absorption characteristics at room temperature, and after heating the formulation to 32°C, the composition thickens to a gel-like consistency.

Example 33. (a) Oil-free Moisturizer (formulation I): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 9.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
PPG-2 Myristyl Ether Propionate	3.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
Citric Acid	0.01
USP Purified Water	71.19

¹Germaben® II available from Sutton Laboratories

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The viscosity vs. temperature curve is shown in Figure 21 and demonstrates that addition of adjuvants to the composition significantly enhances the responsive polymer network maximum viscosity (>900,000 cps). The use of the poloxamer:poly(acrylic acid) polymer network in the formulation also imparts a unique viscosification effect after application to the skin, which is not evident in typical commercial O/W emulsion formulations (See Figure 21b).

(b) Oil-free Moisturizer (formulation II): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 10.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Carbopol 980	1.0

Ingredient	% w/w
D-Panthenol, propylene glycol	1.0
Preservative	1.0
Hydrolyzed protein (and) hyaluronic acid	0.5
Sodium hydroxide	0.2
USP Purified Water	90

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 34. Sunscreen Lotion. An oil-free, lubricous sunscreen lotion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 11.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	2.0
Glycerin USP	8.0
Carbopol 980	1.0
Parsol MCX	7.0
Myristyl Ether Propionate	5.0
Preservative	1.0
Cyclomethicone	1.0
Sodium hydroxide	0.2
USP Purified Water	74

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance

with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 35. Facial mask. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 12.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	1.0
Polyvinyl alcohol	6.0
Polyvinylpyrrolidone (20%)	5.0
D-panthenol, propylene glycol	1.25
Propylene glycol	1.25
USP Purified Water	85.5

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Facial toner. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 13.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	0.01
Hydroxyethyl cetyldimonium phosphate	1.00
PEG-40 hydrogenated castor oil	2.00

Ingredient	% w/w
D-panthenol, propylene glycol	0.50
Glycerin	2.00
Witch hazel extract	5.00
USP Purified Water	88.49

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The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Solubilization studies of model hydrophobic agents in the poloxamer:poly(acrylic acid) polymer network: estradiol and progesterone. This example is presented to demonstrate the solubilization of a hydrophobic agent in the polymeric network. Progesterone and estradiol were used as the hydrophobic agents in this model solubilization study.

Acrylic acid (99%), fluorescein (98%), β -estradiol (98%), and progesterone (98%) were all obtained from Aldrich and used as received. Pluronic® F127 NF was obtained from BASF. Poly(oxyethylene-b-oxypropylene-b-oxyethylene)-g-poly(acrylic acid) copolymers (responsive polymer network) were synthesized by free-radical polymerization of acrylic acid in the presence of poloxamer as described above. The polymer network copolymers discussed here were composed of about 1:1 ratio of PAA to poloxamer. The rheological properties of polymer network were assessed using LVDV-II+ and RVDV-II+ Brookfield viscometers. The microscopic light scattering of 21 nm poly(styrene) latex particles in deionized water and 1 wt% reversibly gelling polymer network was measured using He-Ne laser as described previously (see Matsuo, E.S., Orkisz, M., Sun, S.-T., Li, Y., Tanaka, T., Macromolecules, 1994, 27, 6791). The solubility of fluorescein and hormones in aqueous solutions was measured by the equilibrium of excess solubilize with the corresponding solution following

30

removal of undissolved species by centrifugation and filtration. Hydrophobic agents were assayed spectrophotometrically at 240 (progesterone) or 280 nm (estradiol), or by using 70/30 w/w H₂SO₄/MeOH (Tsilifonis-Chafetz reagent). In vitro hormone release studies were conducted using thermostated, vertical Franz cells. Spunbonded polypropylene microfilters (micron retention, 15-20) were used as a membrane separating feed and receiver phases in Franz cells. The responsive polymer network, water, ethanol, and 20% PEG in water were observed to wet the membrane. The receiver solution consisted of 20 w% PEG in water (pH 7) and were stirred by magnetic bars. The feed phases composed of responsive polymer network were loaded with either estradiol or progesterone. Each hormone was dissolved in ethanol and the resulting solution was added into the responsive polymer network.

Equilibrium solubility vs. temperature plots for estradiol and progesterone (partition coefficient octanol/water (P) 7200 and 5888, respectively), in aqueous solutions of Pluronic® F127 polyol and responsive polymer network are presented in Figure 22. It can be seen that increasing temperature and concentration (C) of polymers in the solution raises the amount of the hormone dissolved. In Figure 22a, vertical lines represent critical micellar temperatures (CMT) for corresponding Pluronic® F127 polyol solutions. It is interesting to note that the slope of the solubility-temperature plots increased as temperature reached CMT, indicating that solubilization in the Pluronic® solutions was predominantly due to the formation of micelles. Similar trend was observed in the responsive polymer network solutions. The S values in 5% aqueous solutions of branched PAA did not exceed 15 and 40 µg/mL at 60°C for estradiol and progesterone, respectively. The solubility values found for responsive polymer network were the same as S in parent Pluronic® solutions of equivalent concentrations. Therefore, it may be suggested that solubilization behaviors of the responsive polymer network are governed by the properties of the poloxamer incorporated into it. Thermodynamic parameters of the solubilization process with responsive polymer network were calculated using the same approximations as in the micellar solubilization with Pluronic® polyols. See, Saito, Y., Kondo, Y., Abe, M., Sato, T., Chem. Pharm. Bull., 1994, 42, 1348. Namely,

partition coefficient P was estimated from equilibrium solubilities of estradiol in responsive polymer network and water:

$$P = S_{SH}/S_w \quad (13)$$

by extrapolating the solubility plots of the steroid in Figure 22 to 100% responsive polymer network. Using P values obtained from data in Figure 23, we calculated the standard free energy change (ΔG), standard enthalpy of solubilization (ΔH), and standard entropy of solubilization (ΔS) using the following expressions:

$$\Delta G = -RT \ln P; \Delta H = -R \Delta \ln P / \Delta(1/T); \Delta S = (\Delta H - \Delta G)/T \quad (14)$$

Thermodynamic parameters obtained along with P values are given in Table 14.

Apparent partition coefficients and thermodynamic parameters for solubilization of estradiol by responsive polymer network.

Table 14.

T, K	$P = S_{SH}/S_w$	ΔG kJ/mol	ΔH kJ/mol	ΔS J/mol
277	490	-14.3	4.72	68.6
293	520	-15.2		52.0
310	660	-16.7		53.9
323	660	-17.4		54.0
333	660	-18.0		54.0

Negative ΔG values indicate spontaneous solubilization at all temperatures, whereas positive ΔH shows that the solubilization was endothermic, similar to the solubilization of estriol, as well as indomethacin, by the poloxamer. Notably, ΔS of solubilization was always positive, suggesting that the more ordered water molecules surrounding hydrophobic estradiol molecules moved to the less ordered bulk phase when the estradiol was transferred to the hydrophobic core of PPG segments in responsive polymer network. The aggregation of the PPG segments at elevated temperatures provides not only temporary cross-linking in the gel, but also a thermodynamically "friendly" environment for the hydrophobic drugs. Indeed, one can express the free energy of formation of the aggregate core-water interface in responsive

polymer network as:

$$\Delta G = [\sigma P_w(1-\phi) + \sigma W_D \phi](4\pi R^2/n) \quad (15)$$

where σP_w and σW_D are the interfacial tensions between pure PPO polymer and water and between water and the drug, respectively; ϕ is the volume fraction of the drug within the PPO core; R is the effective radius of the core; and n is the aggregation number.

Equation (3) shows that solubilization of a hydrophobic drug of high σW_D should increase the stability of the aggregate. The solubilization process was found to decrease the critical micellization concentration and substantially increase the micellar core radius in Pluronic surfactants (Hurter, P.N., et al., "In Solubilization in Surfactant Aggregates", Christian, S.D., Ed., Marcel Dekker, New York, 1995). A similar trend is indicated by the lowering the onset of gelation of the responsive polymer network upon solubilization of fluorescein (LogP 2.1) (Figure 24). The solubilization of hydrophobic drugs by responsive polymer network, analogous to the micellar solubilization of drugs by poloxamer, suggests that the responsive polymer network can be an effective vehicle in drug delivery.

Our in vitro study of hormone release from responsive polymer network shows an increase in the initial transport rate with either decreasing total polymer concentration in the formulation or decreasing temperature (Figure 25). These effects are related to the changes in macroscopic viscosity of the responsive polymer network, which erodes more rapidly from the feed phase through the membrane into the receiver compartment as the viscosity decreases (Figure 26). The degree of the responsive polymer network erosion was measured by weighing hormone-loaded responsive polymer network before and after kinetic experiment.

Figure 27 shows that the relative amount of progesterone penetrating into the receiver phase decreased 4-fold with the increase of total polymer concentration, whereas the total relative amount of progesterone stayed almost constant as total polymer concentration in the responsive polymer network increased. This result shows the existence of two routes of transport of hydrophobic drugs in our model system. Firstly, the drug incorporated into aggregates within the responsive polymer network

system can flow through the membrane along with the erosion of the responsive polymer network; secondly, the drug not associated with the responsive polymer network aggregates can diffuse out of the responsive polymer network in the feed phase. The second process should not be related to the viscosity of the responsive polymer network. Indeed, the dynamic light scattering experiment shows no dramatic change of diffusivity of poly(styrene) latex particles in the responsive polymer network as temperature rises thereby increasing macroscopic viscosity more than 10-fold (Figure 28). This result indicates that the viscosity of the responsive polymer network is essentially unaffected on the microscopic scale.

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Appendix A attached.

APPENDIX A

FUNCTION DEFINITIONS

- | | | |
|----|--|--|
| | Abrasive: abrades, smoothes, polishes | Buffer: helps maintain original pH (acidity or basicity) of a preparation |
| 5 | Absorbent powder: takes up liquids, sponge-like action | Carrier: a vehicle or base used for a preparation |
| | Absorption base: formes water-in-oil emulsions | Chelate: form a complex with trace-metal impurities, usually calcium or iron |
| | Acidulent: acidifies, lowers pH, neutralizes alkalis | Colorant: adds color, may be a soluble dy or an insoluble pigment |
| 10 | Amphoteric: capable of reacting chemically either as an acid or a base; amphoteric surfactants are compatible with anionic and cationic surfactants | Conditioner: improves condition of skin and hair |
| | Analgesic: relieves pain | Coupling agent: aids in solubilization or emulsification of incompatible componenets |
| | Antacid: neutralizes stomach acidity | Decolorant: removes color by adsorption, bleaching or oxidaion |
| 15 | Antibacterial: destroys/inhibits the growth/reproduction of bacteria | Denaturant: used to denature ethyl alcohol |
| | Anti-caking: prevents or retards caking of powders; keeps powders free-flowing | Dental powder: powdered dentifrice |
| | Anti-dandruff: retards or eliminates dandruff | Deodorant: destroys, masks, or inhibits formation of unpleasant odors |
| 20 | Antifoam: suppresses foam during mixing | Depilatory: removes hair chemically |
| | Anti-inflammatory: reduces, suppresses, counteracts inflammation | Detergent: a surface-active agent (surfactant) that cleans by emulsifying oils and suspends particulate soil |
| | Anti-irritant: reduces, suppresses or prevents irritation | Disinfectant: destroys pathogenic microorganisms |
| 25 | Antimicrobial: destroys, inhibits or suppresses the growth of microorganisms | Dispersant: promotes the formation and stabilization of a dispersion or suspension |
| | Antioxidant: inhibits oxidation and rancidity | Dye stabilizer: see Stabilizer |
| | Antiperspirant: reduces or inhibits perspiration | Emollient: softens, smoothes skin |
| | Antipruritic: reduces or prevents itching | Emulsifier: a surface-active agent (surfactant) that promotes the formation of water-in-oil or oil-in-water emulsions |
| 30 | Antiseptic: inhibits the growth of microorganisms on the skin or on living tissue | Enzymes: complex proteins produced by living cells that catalyze biochemical reactions at body temperature. |
| | Antistat: reduces static by neutralizing electrical charge on a surface | Fiber: strands of natural or synthetic polymers; for instance, cotton, wool, silk, nylon, polyester |
| 35 | Astringent: contracts organic tissue after application | Film former: solution of a polymer that forms films when the solvent evaporates after application to a surface |
| | Binder: promotes cohesion of powders | |
| | Bleaching agent: lightens color, oxidizing agent | |
| | Botanical: natural plant derivative | |

- Fixative:** fixes or sets perfumes; retards evaporation; promotes longer lasting aroma
- Flavor:** imparts a characteristic taste (and aroma) to edible foods and drinks; sometimes used in lip products
- Foam booster:** enhances quality and quantity of lather of shampoos
- Foamer:** a surface-active agent (surfactant) that produces foam; an emulsion of air-in-water
- Foam stabilizer:** see Foam booster
- Fungicide:** inhibits or destroys growth of fungi
- Gellant:** a gelling agent; forms gels; includes a wide variety of materials such as polymers, clays and soaps
- Glosser:** furnishes a surface luster or brightness; usually used in lip or hair products
- Hair colorant:** see Colorant
- Hair conditioner:** see Conditioner
- Hair dye:** imparts a new permanent or semi-permanent color to hair
- Hair-set polymer:** polymer and/or resins used to maintain desired hair shape
- Hair-set resin:** see Hair-set polymer
- Hair waving:** see Reducing agent and Neutralizer
- Humectant:** absorbs, holds, and retains moisture
- Hydrotrope:** enhances water solubility
- Intermediate:** basic chemicals which are chemically modified to obtain the desired function
- Lathering agent:** a surface active agent (surfactant) that forms a foam or lather on mixing with air in solution; see also Foamer
- Lubricant:** reduces friction, smoothes, adds slip
- Moisture barrier:** retards passage of moisture or water
- Moisturizer:** aids in increasing the moisture content of the skin through humectant or barrier action
- Neutralizer:** an oxidizing agent used in hair waving that stops the action of the reducing agent and re-establishes the disulfide linkages in hair
- Oil absorbent:** see Absorbent powder
- Ointment base:** an anhydrous mixture of oleaginous components used as a vehicle for medicaments
- Opacifier:** opacifies clear liquids or solids
- Oxidant:** oxidizing agent, neutralizes reducing agents, bleaching agent
- Pearlant:** imparts a pearlescent texture and luster
- Perfume solvent:** see Solvent and Solubilizer
- Peroxide stabilizer:** see Stabilizer
- Pigment:** a finely powdered insoluble substance used to impart color, luster, or opacity
- Plasticizer:** plasticizes (makes more flexible) polymeric films or fibers
- Polish:** smoothes; adds gloss and luster
- Polymer:** a very high molecular weight compound consisting of repeating structural units
- Powder:** a solid in the form of fine particles
- Preservative:** protects products from spoilage by microorganisms
- Propellant:** pressurized gas in a container used to expel the contents when pressure is released by opening a valve
- Protein:** naturally occurring complex combinations of amino acids
- Reducing agent:** reduces a chemical compound usually by donating electrons; neutralizes oxidizing agents
- Refatting agent:** adds oils materials to the surface of substrates, e.g., skin and hair
- Resin:** nonvolatile solid or semisolid organic substances obtained from plants as exudates to prepared by polymerization of simple molecules
- Sequestrant:** forms coordination complexes with multivalent positive ions
- Silicone:** polymeric organic silicon compounds which are water-resistant

- Skin protectant:** protects the skin from environmental
- Solubilizer:** solubilizes, usually into aqueous vehicles, normally insoluble materials, such as fragrances, flavors, oils, etc.
- Solvent:** usually liquids capable of dissolving other substances
- Stabilizer:** added to stabilize emulsions and/or suspensions
- Stimulant:** produces a temporary increase in the functional activity of an organism or any of its parts
- Surfactant (surface active agent):** lowers surface tension between two or more incompatible phases; soaps, detergents, wetting agents, solubilizing agents and emulsifying agents are typical surfactants; surfactants are classified as anionic, cationic, nonionic and amphoteric; anionic surfactants are negatively charged, cationic surfactants have no electrical charge
- Suspending agent:** keeps finely divided solid particles in suspension
- Sweetener:** sweetens to provide a more pleasant taste
- Tanning accelerator:** accelerates the tanning of skin
- Thickener:** thickens or increases viscosity/consistency
- Thixotrope:** the property of certain gels and emulsions of becoming more fluid or less viscous when shaken or stirred
- UV absorber:** used as a sunscreen and to protect preparations from degradation by UV radiation
- UVA absorber:** absorbs in the range 320-400 nanometers (nm)
- UVB absorber:** absorbs in the range 290-320 nanometers (nm)
- Wax:** any of numerous substances of plant, animal or synthetic origin that contain principally esters of higher fatty acids and higher fatty alcohols; free fatty alcohols, fatty acids and hydrocarbons may also be present; waxes derived from petroleum
- products are mainly high-molecular-weight hydrocarbons
- Wetting agent:** a surface-active agent (surfactant) that lowers the surface and interfacial tension, facilitating the wetting of surfaces

FUNCTIONS

	<u>Abrasive</u>		<u>AHA</u>
	Adzuki beans		Apple (Pyrus malus) extract
5	Almond (Prunus amygdalus) meal, shell granules		Apricot (Prunus armeniaca) kernel powder
	Aluminum silicate		Citric acid
	Apricot (Prunus armeniaca) kernel powder, shells		Ethyl lactate
	Hydrated silica		Glycolic acid
	Jojoba (Buxus chinensis) seed powder		Lactic acid
10	Luffa cylindrica		Malic acid
	Olive stone granules		Sodium lactate
	Oyster shell powder		Tartaric acid
	Peach (Prunus persica) pit powder		
	Peach (Prunus persica) stone granules		<u>Antiacne</u>
15	Polyethylene		Clays (white, yellow, red, green, pink)
	Polyethylene HEC granules		Perfluorodecalin
	Polyethylene oxidized, P. spheres		Salicylic acid
	Polystyrene		Sulfur
	Pumice		
20	Rice (Oryza sativa) bran		<u>Anti-aging</u>
	Silica and S. colloidal		Basil (Ocimum basilicum) extract
	Sodium chloride		Carrot (Daucus carota) extract
	Walnut (Juglans regia) shell powder		Catalpa kaempfera extract
25	<u>Absorption base</u>		Ceramide 33 (liquid soy extract)
	1,2,6-Hexanetriol		Crataegus cuneata extract
	Kaolin		Eugenia jambolana extract
	Petrolatum		Fomes fometarius extract
	Rice (Oryza sativa) starch		Fomistopsis pinicola extract
30	Soy (Glycine soja) sterol		Ganoderma lucidum oil
	Zeolite		Ginseng (Panax ginseng) extract
	<u>Absorbent powder</u>		Hyaluronic acid
	Corn (Zea mays) starch		Hydrolyzed serum protein
35	Maltodextrin		Hydrolyzed soy flour
	Nylon-12		Isachne pulchella extract
	Oat (Avena sativa) bran, flour, meal		Lactoferrin
	Zeolite		Lady's Thistle (Silybum marianum) extract
40	<u>Acidulent</u>		Ligusticum jeholense extract
	Acetic acid		Marine collagen
	Citric acid		Mushroom (Coriolus versicolor) extract
	Fumaric acid		Must rose (Rosa moschata) oil
	Glutamic acid		Perfluorodecalin
45	Glycolic acid		Quaternium-51
	Hydrochloric acid		Rubus thunbergii extract
	Lactic acid		Serum protein
	Nitric acid		Stenocalyx micalii extract
	Phosphoric acid		Tricholoma matsutake extract
50	Sodium bisulfate		<u>Antibacterial</u>
	Sulfuric acid		Ammonium iodide
	Tartaric acid		Chlorhexidine
			Chlorhexidine diacetate, C. digluconate
			Chlorhexidine dihydrochloride

- Chlorphenesin
Hexamidine diisethionate
Hexétidine
Iceland moss (*Cetraria islandica*) extract
5 Lactoterrin
Lauralkonium bromide, L. chloride
Laurtrimonium chloride
Laurylpyridinium chloride
Mauritiella armata extract
10 Mushroom (*Cordyceps sbolifera*) extract
Orange blossom extract
Orange (*Citrus aurantium dulcis*) peel extract
PEG-42 Ebiriko ceramides extract
Peppermint (*Mentha piperita*) extract
15 Philodendron (*Phellodendron amurense*) extract
Pine (*Pinus sylvestris*) needle extract
Polymethoxy bicyclic oxazolidine
Quaternium 73
Rubus thunbergii extract
20 Tea tree (*Melaleuca alternifolia*) oil
Triclocarban
Undecylenic acid

Anticaking

- 25 Aluminum starch octenylsuccinate
Calcium stearate
Distarch phosphate
Hydrated silica
Kaolin
30 Magnesium myristate, M. silicate
Polyethylene, micronized
Silica silylate
Sodium aluminum silicate
Zinc stearate

Anticaries agent

- Cetylamine hydrofluoride
Olaflur
Sodium fluoride
40 Stearyl trihydroxyethyl propylenediamine
dihydrofluoride

Anticellulite

- Aminophylline
45 Bladderwrack (*Fucus vesiculosus*) extract
Butcherbroom (*Ruscus aculeatus*) extract
Carcinia cambogia extract
Fomes fometarius extract
Fomistopsis pinicola extract
50 Ivy extrey
Mushroom (*Coriolus versicolor*) extract
TEA-hydroiodide
Tricholoma matsutake extract

Antidandruff

- Burdock (*Arctium lappa*) extract
Chloroxylenol
Corydalis ambigua extract
Disodium undecylenamido MEA-sulfosuccinate
Ginger root extract
Inga edulis extract
Mauritiella armata extract
Myristalkonium saccharinate

PEG-6 undecylenate

- Piroctone olamine
Resorcinol
Rosemary (*Rosmarinus officinalis*) extract
Sodium shale oil sulfonate
Stenocalyx micalii extract
Undecylenamide DEA
Willow (*Salix alba*) bark extract
Zinc pyrithione

Antifungal

- Black walnut (*Juglans nigra*) extract
Coneflower (*Echinacea angustifolia*) extract
Orange blossom extract
Pfaffia paniculata extract

Anti-inflammatory

- Allantoin polygalacturonic acid
Bisabolol
Black poplar (*Populus nigra*) extract
Brassica rapa-depressa extract
Butcherbroom (*Ruscus aculeatus*) extract
Calendula officinalis extract
Catalpa kaempfera extract
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chaparral (*Larrea mexicana*) extract
Coneflower (*Echinacea angustifolia*) extract
Cornflower (*Centaurea cyanus*) extract
Dipotassium glycyrrhizinate
Euphorium fortunei extract
Duphrasia officinalis extract
Ficus racemosa extract
Golden seal (*Hydrastis canadensis*) root extract
Guaiazulene
Horse chestnut (*Aesculia hippocastanum*) extract
Jujube (*Zizyphus jujuba*) extract
Laminaria japonica extract
Licorice (*glycyrrhiza glabra*) extract
Ligusticum jeholense, L. lucidum extract
Matricaria (*Chamomilla recutita*) extract
Melaleuca uncinata extract
Melia azadirachta extract

	Mulberry (<i>Morus nigra</i>) extract	PVP
	Niacinamide ascorbate	Saccharomyces lysate extract
	Orange (<i>Citrus aurantium dulcis</i>) peel extract	Sodium C12-15 pareth-15 sulfonate
	Orange blossom extract	Sodium lauroamphoacetate
5	Palmetto extract	Soy (<i>Glycine soja</i>) protein
	Palmitoyl collagen amino acids	Undecylenoyl collagen amino acids
	Passion flower (<i>Passiflora laurifolia</i>) fruit extract	Valerian (<i>Valeriana officinalis</i>) extract
	Paulownia <i>imperialis</i> extract	
	Alicyclic acid	<u>Antimicrobial</u>
10	Shea butter (<i>Butyrospermum parkii</i>)	Benzalkonium chloride
	Sodium carboxymethyl beta-glucan	Benzoic acid
	soy (<i>Glycine soja</i>) protein	Benzyl alcohol
	Stearyl glycyrrhetinate	Bromochlorophene
	Stenocalyx <i>micalii</i> extract	2-Bromo-2-nitropropane-1,3-diol
15	Tocopheryl acetate, T. nicotinate	Butylparaben
	Trichomonas <i>japonica</i> extract	Capryloyl collagen amino acids
	Willow (<i>Salix alba</i>) extract	Capryloyl glycine, C. keratin amino acids
	Witch hazel (<i>Hamamelis virginiana</i>) extract	Captan
	withania <i>somniferum</i> extract	Cetethyldimonium bromide
20	Yarrow (<i>Achillea millefolium</i>) extract	Cetyl pyridinium chloride
	Zinc lactate	Chlorothymol
	<u>Anti-irritant</u>	Chloroxylenol
	Acetyl monoethanolamine	Citron oil
25	Allantoin	Copper PCA
	Allantoin acetyl methionine, A. glycyrrhetic acid	Dichlorobenzyl alcohol
	Azelamide MEA	Dilauryldimonium chloride
	Betaine	Domiphen bromide
30	Calendula <i>officinalis</i> extract	Ethylparaben
	Cocamidopropyl betaine	Eucalyptus (<i>Eucalyptus globulus</i>) extract
	Coceth-7 carboxylic acid	Fennel (<i>Foeniculum vulgare</i>) extract
	Cornflower (<i>Centaurea cyanus</i>) extract	Garlic (<i>allium sativum</i>) extract
	Diisostearyl dimer dilinoleate	Glyceryl caprylate, G. laurate
35	Dipalmitoyl cystine	Hexamidine diisethionate
	Green tea extract	Hinokitiol
	Hydrolyzed sweet almond protein	Honeysuckle (<i>Lonicera caprifolium</i>) extract
	Hydroxypropyltrimonium gleatin	Lichen (<i>Usnea barbata</i>) extract
	Lauroyl collagen amino acids	Myristalkonium chloride
40	1-Lysine lauroyl methionine	Pentylene glycol
	Mallow extract	Phenethyl alcohol
	Matricaria (<i>Chamomilla recutita</i>) extract	Phenol
	Palmitoyl hydrolyzed milk protein	Phenoxyethanol
	Palmitoyl hydrolyzed wheat protein	Phenoxyisopropanol
45	Palmitoyl keratin amino acids	Phenyl mercuric acetate, P.m. benzoate, P.m. borate
	PEG-12 palm kernel glycerides	o-Phenylphenol
	PEG-28 glyceryl tailowate	Polymethoxy bicyclic oxazolidine
	PEG-30 glyceryl monococoate	Potassium sorbat
	PEG-60 almond glycerides	Propylparaben
50	PEG-78 glyceryl cocoate	Ricinoleamodopropyltrimonium ethosulfate
	PEG-82 glyceryl tailowate	Sage (<i>Salvia officinalis</i>) extract
	PEG-200 glyceryl tailowate	Sodium benzoate, S. pyrrhione
	Propionyl collagen amino acids	Sodium ricinoleate, S. shale oil sulfonate
		Thimerosal

- Thyme (*Thymus vulgaris*) extract
Thymol
Triclocarban
Triclosan
- 5 Undecylenamidopropyltrimonium methosulfate
Undecylenic acid
Zinc oxide, Z. PCA
Zinc pyrithione, Z. undecylenate
- 10 Antioxidant
Ascorbic acid
A. polypeptide
Ascorbyl oleate, A. palmitate
Beta-carotene
- 15 BHA
BHT
t-Butyl hydroquinone
Dilauryl thiodipropionate
Dimyristyl thiodipropionate
- 20 Disodium EDTA
Distearyl thiodipropionate
Dodecyl gallate
EDTA
Erythorbic acid
- 25 Ferulic acid
Grape (*Vitis vinifera*) seed extract
Green tea extract
HEDTA
Hydroquinone
- 30 Hydroquinone-beta-D-glucopyranoside
p-Hydroxyanisole
Lactoferrin
Lysine PCA
Melanin
- 35 Methyl gallate
Niacinamide ascorbate
Nordihydroguaiarenic acid
Oat (*Avena sativa*) extract
Oryzanol
- 40 Pentasodium pentetate
Pentetic acid
Propyl gallate
Retinyl palmitate polypeptide
Rosemary (*Rosmarinus officinalis*) extract
- 45 *Saccharomyces* lysate extract
Sage (*Salvia officinalis*) extract
Sodium ascorbate, S. erythorbate
Sodium metabisulfite
Sodium selenate, S. sulfite
- 50 Superoxide dismutase,
Tea (*Camellia sinensis*) extract
Tetrasodium EDTA
Tocopherol
- Tocopheryl acetate, T. linoleate
Wild marjoram (*Origanum vulgare*) extract
Yeast (*Saccharomyces cerevisiae*) extract (Faex)
- Antiperspirant
Allantoin-aluminum chlorhydrate
Aluminum capryloyl hydrolyzed collage
Aluminum chlorhydrex-gly, A. chloride
Aluminum chlorohydrate, A. chlorohydrex
Aluminum PCA, A. sesquichlorohydrate
Aluminum undecylenoyl collagen amino acids
Aluminum zirconium pentachlorohydrate
Aluminum zirconium tetrachlorohydrate
Aluminum zirconium tetrachlorohydrex GLY
Aluminum zirconium trichlorohydrate
Aluminum-zirconium-glycine powder
Sage (*Salvia officinalis*) extract
Tormentil (*Potentilla erecta*) extract
Zirconium chlorohydrate
- Antiseptic
Aluminum PCA
Azadirachta indica extract
2-Bromo-2-nitropropane-1,3-diol
Calendula amurensis extract
p-Chloro-m-cresol
Clove (*Eugenia caryophyllus*) oil
Crataegus cuneata extract
Dichlorobenzyl alcohol
Entada phaseoloides extract
Eucalyptus (*Eucalyptus globulus*) extract
Golden seal (*Hydrastis canadensis*) root extract
Hexachlorophene
Melia australasica, M. azadirachta extract
Methyl salicylate
Orange (*Citrus aurantium dulcis*) peel extract
Oxyquinoline sulfate
Pfaffia paniculata extract
Potassium abietoyl hydrolyzed collagen
PVP-iodine
Silver nitrate
Sodium salicylate
Sterculia platanifolia extract
Tea tree (*Melaleuca alternifolia*) oil
Tormentil (*Potentilla erecta*) extract
Xanthozylum bungeanum extract
- Antistat
Acetamide MEA
Acetamidopropyl trimonium chloride
6-(N-Acetylamino)-4-oxyhexyltrimonium chloride
Alkyl dimethyl betaine

- Babassuamidopropyl ammonium chloride
 Behenamidopropyl ethyldimonium ethosulfate
 Behenamidopropyl hydroxyethyl dimonium
 chloride
 5 Carboxymethyl chitin
 Cetethyl morpholinium ethosulfate
 Cetrimonium chloride
 Chitin
 Chitosan
 10 Cocamidopropyl ethyldimonium ethosulfate
 Cocodimonium hydroxypropyl hydrolyzed rice
 protein
 Cocodimonium hydroxypropyl hydrolyzed soy
 protein
 15 Dimethicone hydroxypropyl trimonium chloride
 dimethyl behenamine, D. cocamine
 Dimethyl palmitamine, D. soyamine
 Dimethyl tallowamine
 Dioleamidododecyl hydroxyethylmonium
 20 methosulfate
 Dipalmitoylethyl hydroxyethylmonium
 methosulfate
 N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate)
 ammonium chloride
 25 Erucamidopropyl hydroxysultaine
 Glyceryl monopyroglutamate
 Hydrogenated tallowamine oxide
 Isostearyl _____ propyl dimethylamine
 Lactamidopropyl trimonium chloride
 30 Lauryldimonium hydroxypropyl hydrolyzed
 collagen
 Linoleamidopropyl dimethylamine dimer
 dilinoleate
 Olealkonium chloride
 35 PEG-2 cocamine
 PEG-2 cocomonium chloride
 PEG-2 oleammonium chloride
 PEG-8 caprylic/capric glycerides
 PEG-10 cocamine
 40 PEG-15 soyamine
 PPG-9 diethylmonium chloride
 PPG-25 diethylmonium chloride
 PPG-40 diethylmonium chloride
 Propylene glycol stearate
 45 Quaternium-26, -27, -53, -62, -72
 Rapeseedamidopropyl benzyltrimonium chloride
 Rapeseedamidopropyl epoxypropyl dimonium
 chloride
 Silica, colloidal
 50 Sorbitan caprylate
 N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl
 ammonium ethyl sulfate
 Soyethyl morpholinium ethosulfate
 Soyethyldimonium ethosulfate
 Stearalkonium chloride
 Stearamidopropyl benzyl dimonium chloride
 Stearamidopropyl ethyldimonium ethosulfate
 Steartrimonium chloride
 N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl
 ammonium ethyl sulfate
 Wheat germamidopropylethyldimonium
 ethosulfate

Astringent
 Aluminum citrate, A. lactate
 Astragalus sinicus extract
 Astrocaryum murumuru, A. tucuma extract
 Azadirachta indica extract
 Azelamide MEA
 Bearberry (Arctostaphylos uva-ursi) extract
 Birch (Betula alba) leaf extract
 Catalpa kaempferia extract
 Celastrus paniculata extract
 Coccinea indica extract
 Coffee (Coffea arabica) bean extract
 Euphrasia officinalis extract
 Euterpe precatoria extract
 Evening primrose (Oenothera biennis) extract
 Gentian (Gentiana lutea) extract
 Geranium maculatum extract
 Grape (Vitis vinifera) leaf extract
 Henna (Lawsonia inermis) extract
 Hierochloa odorata extract
 Honeysuckle (Lonicera caprifolium) extract
 Hops (Humulus lupulus) extract
 Horehound extract
 Hypericum perforatum extract
 Ivy extract
 Juniperus communis extract
 Kadsura heteroloba extract
 Kola (Cola acuminata) extract
 Lady's mantle (Alchemilla vulgaris) extract
 Lemon (Citrus medica limonum) extract, peel
 extract
 Lemon bioflavonoids extract
 Lysimachia foenum-graecum extract
 Magnolia spp. extract
 Mauritia flexosa extract
 Maximiliana regia extract
 Melaleuca uncinata, M. wilsonii extract
 Melia australasica extract
 Nettle (Urtica dioica) extract
 Oak (Quercus) bark extract
 Ocimum basilicum, O. sanctum extract
 Palmetto extract
 Passion flower (Passiflora laurifolia) fruit extract

- Plantain (*Plantago major*) extract
 Polygonum multiflorum extract
 Pterocarpus marsupianus extract
 Raspberry (*Rubus*) extract
 5 Sambucus nigra oil
 Sanguisorbae root extract
 Selinum spp. extract
 Shorea robusota extract
 Tannic acid
 10 Walnut (*Juglans regia*) leaf extract, oil
 Wheat (*Triticum vulgare*) protein
 White nettle (*Lamium album*) extract
 Witch hazel (*Hamamelis virginiana*) extract
 Xanthoxylum bungeanum extract
 15 Zinc lactate
 Ziziphus jujuba extract

Binder

- Aluminum starch octenylsuccinate
 20 Boron nitride
 C20-40, C30-50, C40-60 alcohols
 Calcium stearate
 Cellulose gum
 Dihydroabietyl behenate
 25 Diisostearyl malate
 dioctyl sebacate
 Distarch phosphate
 ethylcellulose
 Gellan gum
 30 Hydrogenated jojoba oil
 Isocetyl alcohol, I. palmitate
 Isopropyl isostearate
 Isostearyl erucate, I. isostearate
 Isostearyl neopentanoate
 35 Maltodextrin
 Methylcellulose
 Microcrystalline cellulose
 Octyl palmitate
 Octyldodecyl myristate
 40 bis-Octyldodecyl stearoyl dimer dilinoleate
 Octyldodecyl stearoyl stearate
 Oleyl oleate
 PEG-20, -75, -150, -240, -350
 Polydipentene
 45 Polyethylene; P. micronized
 PTFE
 PVP
 Sorbitol
 Synthetic wax
 50 Tapioca dextrin
 Tridecyl benenate, T. neopentanoate
 Tridecyl stearoyl stearate
 Trisodium HEDTA

Biol. polymer

- Distarch phosphate
 Dog rose (*Rosa canina*) see extract
 Hydrogen peroxide
 Kojic acid
 Mulberry (*Morus nigra*) extract
 Sanguisorbae root extract

Botanical

- Acacia
 Acacia farnesiana extract
 Agrimony (*Agrimonia eupatoria*) extract
 Alder (*Alnus firma*) extract
 Alfalfa (*Medicago sativa*) extract
 Algae (*Ascophyllum nodosum*) extract
 Algae (*Lithothamnium calcareum*) extract
 Aloe barbadensis, A.b. extract
 Aloe capensis extract
 Alpine Veronica extract
 Althea officinalis extract
 Angelica archangelica extract
 Anise (*Pimpinella anisum*) extract
 Apple (*Pyrus malus*) extract
 Apricot (*Prunus armeniaca*) extract
 Arnica montana extract
 Artemisia capillaris extract
 Artichoke (*Cynara scolymus*) extract
 Asafetida (*Ferula assa foetida*) extract
 Asiasarum _____ extract
 Asparagus officinalis extract
 Astragalus sinicus extract
 Avena (*Geum rivale*) extract
 Avocado (*persea gratissima*) extract
 Balm mint (*Melissa officinalis*) extract, oil
 extract
 Vanana (*Musa sapientum*) extract
 Barley (*Hordeum vulgare*) extract
 Basil (*Ocimum basilicum*) extract
 Bearberry (*Arctostaphylos uva-ursi*) extract
 Bee pollen extract
 Beet (*Beta vulgaris*) extract
 Betaglucon
 Bilberry (*Vaccinium myrtillus*) extract
 Bioflavonoids
 Birch (*Betula alba*) bark extract, leaf extract
 Birch (*Betula platyphylla japonica*) extract
 Bitter orange (*Citrus aurantium amara*) extract,
 flower extract, peel extract
 Black cohosh (*Cimicifuga racemosa*) extract
 Black currant (*Ribes nigrum*) extract
 Black henna extract
 Black poplar (*Populus nigra*) extract
 Black walnut (*Juglans nigra*) extract

	Bladderwrack (<i>Fucus vesiculosus</i>) extract	Dead Sea Mud, Salts
	Borage (<i>Borago officinalis</i>) extract	Dog rose (<i>Rosa canina</i>) hips extract
	Buckthorn (<i>Frangula alnus</i>) extract	Dyer's broom extract
	Burdock (<i>Arctium lappa</i>) extract	Eleuthero ginseng (<i>Acanthopanax senticosus</i>)
5	Burdock (<i>Arctium minus</i>) root extract	extract
	Burnet extract	Elm (<i>Ulmus campestris</i>) extract
	Butcherbroom (<i>Ruscus aculeatus</i>) extract	Eucalyptus (<i>Eucalyptus globulus</i>) extract
	Cabbage rose (<i>Rosa centifolia</i>) extract	Eucalyptus globulus oil
	Calamus (<i>Acorus calamus</i>) extract	Eucommia ulmoides extract
10	Calendula officinalis extract	Euphrasia officinalis extract
	Caper (<i>Capparis spinosa</i>) extract	Evening primrose (<i>Oenothera biennis</i>) extract, oil
	Capsicum frutescens extract, C.f. oleoresin	Everlasting (<i>Helichrysum arenarium</i>) extract
	Caraway (<i>Carum carvi</i>) extract	Fennel (<i>Foeniculum vulgare</i>) extract
	Carrageenan (<i>Chondrus crispus</i>)	Fenugreek extract
15	Carrot (<i>Daucus carota</i>) extract	Fermented rice (<i>Oryza sativa</i>) extract
	Carrot (<i>Daucus carota sativa</i>) oil	Fern (<i>Dryopteris filix-Mas</i>) extract
	Cassia auriculata extract	Fig (<i>Ficus carica</i>) extract
	Celandine (<i>Chelidonium majus</i>) extract	Fir needle extract
	Chamomile (<i>Anthemis nobilis</i>) extract, oil	Fumitory (<i>Fumaria officinalis</i>) extract
20	Chaparral (<i>Larrea mexicana</i>) extract	Gardenia florida extract
	Cherry (<i>Prunus speciosa</i>) leaf extract	Garlic (<i>Allium sativum</i>) extract
	Cherry bark, C.b. extract	Gelidium cartilagineum
	Chestnut (<i>Castanea sativa</i>) extract	Gentian (<i>Gentiana lutea</i>) extract
	Chinese hibiscus (<i>Hibiscus rosa-sinensis</i>) extract	Geranium maculatum extract
25	Chlorella vulgaris extract	Ginger root extract
	Cimicifuga foetida rhizome extract	Ginkgo biloba extract
	Cinchona succiruba extract	Ginseng (<i>Panax ginseng</i>) extract
	Citroflavonoid, water soluble	Glycyrrhetic acid
	Citrus bioflavonoid complex	Glycyrrhizic acid
30	Clary extract	Glycyrrhizin ammoniated
	Clove (<i>Eugenia caryophyllus</i>) extract	Golden seal (<i>Hydrastis canadensis</i>) root extract)
	Clover (<i>Trifolium pratense</i>) extract	Goldthread (<i>Coptis japonica</i>) extract
	_____ officinale rhizome extract, C.o.	Gotu kola extract
	_____ water	Grape (<i>Vitis vinifera</i>) distillate, extract
35	Coffee (<i>Coffea arabica</i>) bean extract	Grape (<i>Vitis vinifera</i>) leaf, seed extract
	_____ oatmeal	Grape skin extract
	_____ (Tussilago farfara) leaf extract	Grapefruit (<i>Citrus grandis</i>) peel extract
	_____ (Symphytum officinale) leaf extract	Green bean (<i>Phaseolus lunatus</i>) extract
	_____ extract	Ground Ivy (<i>Glechoma hederacea</i>) extract
40	_____ (Echinacea angustifolia) extract	Guarana (<i>Paullinia cupana</i>) extract
	_____ officinalis	Harpagophytum procumbens extract
	_____ olitorius extract	Hay flower extract
	_____ (Coriandrum sativum) extract	Hazel (<i>Corylus avellana</i>) nut extract
	_____ (Zea mays) cob powder, silk extract	Henna (<i>Lawsonia inermis</i>) extract
45	_____ poppy (<i>Papaver rhoeas</i>) extract	Hesperidin, H, methyl chalcone
	_____ (Centaurea cyanus) extract	Hibiscus sabdariffa extract
	_____ (Agropyron repens) grass	Hibiscus syriacus extract
	_____ monogina extract	High beta-glucan barley flour
	_____ maritimum extract	Honeysuckle (<i>Lonicera caprifolium</i>) extract
50	Cucumber (<i>Cucumis sativus</i>) extract	Honeysuckle (<i>Lonicera japonica</i>) leaf extract
	Cypress (<i>Cupressus sempervirens</i>) extract	Hops (<i>Humulus lupulus</i>) extract
	Dandelion (<i>Taraxacum officinale</i>) extract	Horse chestnut (<i>Aesculia hippocastanum</i>) extract
	Date (<i>Phoenix dactylifera</i>) extract	Horseradish (<i>Cochlearia armoracia</i>) extract

- | | | |
|----|--|---|
| | Horsetail extract | Nasturtium extract |
| | Houttuynia cordata extract | Neroli extract |
| | Hyacinth (Hyacinthus orientalis) extract | nettle (Urtica dioica) extract |
| | Hydrocotyl (Centella asiatica) extract | Oak (Quercus) bark extract |
| 5 | Hydrolyzed oat protein, soy flour | Oak root extract |
| | Hypericum perforatum extract | Oat (Avena sativa) bran, bran extract, flour, protein |
| | Hyssop (Hyssopus officinalis) extract | Oat flower |
| | Indian cress (Tropaeolum majus) extract | Olive (Olea europaea) extract, leaf extract |
| | Isodonis Japonicus extract | Onion (Allium cepa) extract |
| 10 | Ivy extract | Orange blossom extract |
| | Japanese angelica (Angelica acutiloba) extract, water | Orange (Citrus aurantium dulcis) flower extract, peel extract |
| | Japanese hawthorn (Crataegus cuneata) extract | Pansy (Viola tricolor) extract |
| | Jasmine (Jasminum officinale) extract | Papaya (Carica papaya) extract |
| 15 | Job's tears (Coix lacryma-jobi) extract | Parsley (Carum petroselinum) extract |
| | Jojoba (Buxus chinensis) seed powder | Passion flower (Passiflora laurifolia) fruit extract |
| | Juniperus communis extract | Passionflower (Passiflora incarnata) extract |
| | Kelp (Macrocystis pyrifera) extract | Pea (Pisum sativum) extract |
| | Kiwi (Actinidia chinensis) fruit extract, seed oil | Peach (Prunus persica) extract, leaf extract |
| 20 | Kola (Cola acuminata) extract | Pelargonium capitatum extract |
| | Krameria triandra extract | Pellitory (Parietaria officinalis) extract |
| | Lady's mantle (Alchemilla vulgaris) extract | Pennyroyal (Mentha pulegium) extract |
| | Lady's Thistle (Silybum marianum) extract | Peony (Paeonia albaflora) extract |
| | Laurel (Laurus nobilis) extract | Peony (Paeonia obovata) root extract |
| 25 | Lavender (Lavandula angustifolia) extract, water | Peppermint (Mentha piperita) extract, oil |
| | Lemon (Citrus medica limonum) extract, juice extract, peel extract | Perilla ocymoides extract |
| | Lemon bioflavonoids extract | Periwinkle (Vinca minor) extract |
| | Lemongrass (Cymbopogon schoenanthus) extract | PEG-80 jojoba acid/alcohol |
| 30 | Leopard flower (Belamcanda chinensis) root extract | PEG-120 jojoba acid/alcohol |
| | Lettuce (Lactuca scariola sativa) extract | Pfaffia paniculata extract |
| | Licorice (Glycyrrhiza glabra) extract | Pheildendron amurense extract |
| | Lilac (Syringa vulgaris) extract | Pospholipids |
| 35 | Linden (Tilia argentea) extract | pimento (Pimenta officinalis) extract |
| | Linden (Tilia cordata) extract, water | Pine (Pinus sylvestris) cone, needle extract |
| | Loquat (Eriobotrya japonica) leaf extract | Pineapple (Ananas sativus) extract |
| | Maidenhair fern extract | Plantain (Plantago major) extract |
| | magnolia kobus extract | Pollen extract |
| 40 | Mallow extract | Pongamol |
| | Mandragora officinarum extract | Poria Cocos extract |
| | Mannan | Pueraria lobata extract |
| | Marigold | Queen of the meadow extract |
| | Marine silts | Quillaja saponaria extract |
| 45 | Matricaria (Chamomilla recutita) extract | Quince (Pyrus cydonia) seed extract |
| | Meadowsweet (Spiraea ulmaria) extract | Quinoa (Chenopodium quinoa) extract |
| | Melon (Cucumis melo) extract | Raspberry (Rubus) extract |
| | MEA iodine | Rauwolfia (Serpentina) extract |
| | Mistletoe (Viscum album) extract | Red clover |
| 50 | Mugwort (Artemisia princeps) extract, water | Rehmannia chinensis extract |
| | Mulberry (Morus alba) root extract | Restharrow (Ononis spinosa) extract |
| | Mushroom extract | Rhododendron chrysanthum extract |
| | Myrrh (Commiphora myrrha) extract | Rhodophycea extract |
| | | Rhubarb (Rheum palmatum) extract |

Rice (*Oryza sativa*) bran extract
 Rice fatty acid
 Rose' (*Rosa multiflora*) extract
 Rosemary (*Rosmarinus officinalis*) extract
 5 Rubia tinctorum extract
 Safflower (*Carthamus tinctorius*) extract
 Sage (*Salvia officinalis*) extract, water
 Sambucus nigra berry extract, extract
 Sandalwood (*Santalum album*) extract
 10 Sanguinaria canadensis extract
 Saponaria officinalis extract
 Sasa veitchii extract
 Saxifraga sarmentosa extract
 Scabiosa arvensis extract
 15 Scutellaria baicatensis root extract
 Silk extract
 Silver fir (*Abies pectinata*) extract
 Sisal (*Agave rigida*) extract
 Slippery elm extract
 20 Soapberry (*Sapindus mukuross*) extract
 Sophora angustifolia extract
 Sophora flavescens root extract
 Sophora japonica extract
 Soybean (*Glycine soja*) extract
 25 Soy (*Glycine soja*) germ extract, protein, sterol
 Spearmint (*Mentha viridis*) extract, oil
 Spinach (*Spinacia oleracea*) extract
 Spiraea ulmaria extract
 Sunflower (*Helianthus annuus*) seed extract
 30 Sweet almond (*Prunus amygdalus dulcis*) extract
 Sweet chery (*Prunus avium*) extract
 Sweet cicely (*Anthriscus cerefolium*) extract
 Sweet clover (*Melilotus officinalis*) extract
 Sweet violet (*Viola odorata*) extract
 35 Swertia chirata extract
 Tea (*Camillia sinensis*) extract
 Thyme (*Thymus vulgaris*) extract
 Tomato (*Solanum lycopersicum*) extract
 Tormentil (*Potentilla erecta*) extract
 40 Tuberose (*Polianthes tuberosa*) extract
 Turmeric (*Curcuma longa*) extract
 Valerian (*Valeriana officinalis*) extract
 Walnut (*Juglans regia*) extract, leaf extract
 Water Lily (*Nymphaea alba*) root extract
 45 Watercress (*Nasturtium officinale*) extract
 Wheat (*Triticum vulgare*) extract, protein
 Wheat (*Triticum vulgare*) germ extract
 Wheat bran lipids
 White ginger (*Hedychium coronarium*) extract
 50 White nettle (*Lamium album*) extract
 Wild agrimony (*Potentilla anserina*) extract
 Wild cherry (*Prunus serotina*) bark extract
 Wild indigo (*Baptista tinctoria*)

Wild marjoram (*Origanum vulgare*) extract
 Willow (*Salix alba*) bark extract, extract
 Willow (*Salix alba*) leaf extract
 Witch hazel (*Hamamelis virginiana*) extract
 Yarrow (*Achillea millefolium*) extract
 Yeast (*Saccheromyces cerevisiae*) extract (Faex)
 Yucca vera extract
 Zanthoxylum piperitum extract
 Zedoary (*Curcuma zedoraria*) oil

Buffer

Ammonium carbonate, A. phoshate
 Calcium hydroxide, C. phosphate
 Citric acid
 Ethanolamine HCl
 Glycine
 Phosphoric acid
 Potassium phosphate
 Potassium sodium tartrate
 Sodium acetate, S. citrate
 Sodium lactate, S. phosphate
 Succinic acid
 Tromethamine

Carrier

Acrylates copolymer, spherical powder
 Arginine
 Caprylic/capric triglyceride
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/oleic triglyceride
 Cetareth-20
 Coconut (*Cocos nucifera*) oil
 Cyclodextrin
 Dipropylene glycol
 Glyceryl caprylate, G. caprylate/caprato
 Hydrated silica
 Liposomes
 magnesium silicate
 Methyl propanediol
 PEG-8/SMDI copolymer
 Potassium chloride
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propylene carbonate, P. glycol
 Serum albumin
 Sodium carboxymethyl beta-glucan
 Sodium chloride
 sodium magnesium silicate
 Tapioca dextrin

Chelators

beta-Alanine diacetric acid
 Calcium disodium EDTA

- Disodium EDTA, -copper
EDTA
HEDTA
Malic acid
5 Monostearyl citrate
Pentasodium pentetate
Pentetic acid
Phytic acid
Potassium aspartate
10 Sodium aspartate
Sodium dihydroxyethylglycinate
Sodium hexametaphosphate
Tetrahydroxypropyl ethylenediamine
Tetrasodium EDTA
15 Tripotassium EDTA
Trisodium EDTA, HEDTA
- Cell stimulant
Aesculus chinensis extract
20 Artemisia apiacea extract
Astrocaryum muru, A. tucuma extract
Bactris gasipaes extract
Borojoa sorbilis extract
Calendula amurensis extract
25 Chrysanthemum morifolium extract
Coccinea indica extract
Comfrey (Symphytum officinale) leaf extract
Condurango extract
Dandelion (Taraxacum officinale) extract
30 Echitea glauca extract
Equisetum arvense extract
Eucalyptus (Eucalyptus globulus) extract
Euphorium fortunei extract
Euterpe precatoria extract
35 Ficus racemosa extract
Glycoproteins
Hierochloe odorata extract
Horse chestnut (Aesculia hippocastanum) extract
Inga edulis extract
40 Kadsura heteliloca extract
Ligustrum lucidum extract
Lysimachia foenum-graecum extract
Mauritia flexosa extract
Maximilliana regia extract
45 Melaleuca bracteata, M. symphyocarp extract
Nelumbium speciosum extract
Ocimum basilicum extract, O. santum extract
Paulownia imperialis extract
Pfaffia spp. extract
50 Pterocarpus marsupianus extract
Rubus thunbergii extract
Selinum spp. extract
Shorea robusota extract

Xanthozylum bungeanum extract

Cleansing

Birch (Betula alba) leaf extract
Lemongrass (Cymbopogon schoenanthus) extract
Oat (Avena sativa) bran extract
Passion glower (Passiflora laurifolia) fruit extract
Witch hazel (Hamamelis virginiana) extract
Yarrow (Achillea millefolium) extract

Conditioner

Acetamide MEA
6-(N-Acetylamino)-4-oxyhexyltrimonium
chloride
Acrylamidopropyltrimonium chloride/acrylamide
copolymer
Adipic acid/dimethylaminohydroxypropyl
diethylene triamine copolymer
AMP-isostearoyl hydrolyzed wheat protein
Apricot (Prunus armeniaca) kernel oil
Behenalkonium chloride
Behenamidopropyl dihydroxypropyl dimonium
chloride
Benhenamidopropyl ethyldimonium ethosulfate
Benhenamidopropyl PG-dimonium chloride
Behenamidopropyldimethylamine behenate
Behenamine oxide
Behenoyl PG-trimonium chloride
Behenyl betaine
Benzyltrimonium hydrolyzed collagen
Canolamidopropyl betain
Capramide DEA
Caprylic/capric/lauric triglyceride
Caprylyl pyrrolidone
Cassia auriculata extract
Cetamine oxide
Cetearalkonium chloride
Chitosan PCA
Citric acid
Cocamidopropyl dimethylamine, C.d. lactate,
C.d. propionate
Cocamidopropyl dimethylaminohydroxypropyl
hydrolyzed collagen
Cocamidopropyldimonium
hydroxypropylhydrolyzed collagen
Cocamidopropyl ethyldimonium ethosulfate
Cocamidopropyl PG-dimonium chloride, C.P.c.
phosphate
Coco-morpholine oxide
Coco/oleamidopropyl betaine
Cocodimonium hydroxypropyl hydrolyzed hair
keratin

	Cocodimonium hydroxypropyl hydrolyzed rice protein	Hydroxycetyl hydroxyethyl dimonium chloride
	Cocodimonium hydroxypropyl hydrolyzed silk	Hydroxyproline
	Cocodimonium hydroxypropyl hydrolyzed soy protein	Hydroxypropyl chitosan
5	Cocomut alcohol	Hydroxypropyl guar hydroxypropyltrimonium chloride
	N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate	Hydroxypropyl-bis-isostearamidopropyl dimonium chloride
	Collagen phthalate	Hydroxypropyl bis-stearyldimonium chloride
10	Dibehenyl/diarachidyl dimonium chloride	Hydroxypropyltrimonium gelatin
	Dibehenyldimonium chloride	Hydroxypropyltrimonium hydrolyzed keratin H.h. silk
	Dicetyldimonium chloride	Hydroxypropyltrimonium hydrolyzed wheat protein
	Didecyldimonium chloride	Isopropyl hydroxybutyramide dimethicone copolyol
15	Dihydroxyethyl cocamine oxide	Isopropyl lanolate
	Dihydroxyethyl dihydroxypropyl stearamonium chloride	Isostearamidopropyl betaine, I. dimethylamine
	Dihydroxyethyl tallow glycinate	Isostearamidopropyl dimethylamine gluconate
	Dihydroxyethyl tallowamine oxide	Isostearamidopropyl dimethylamine glycolate
20	Dilauryl acetyl dimonium chloride	Isostearamidopropyl dimethylamine lactat
	Dilinoleamidopropyl dimethylamine	Isostearamidopropyl ethyldimonium ethosulfate
	Dimethyl hydrogenated tallowamine	Isostearamidopropyl laurylaceto dimonium chloride
	Dimethyl lauramine, D.I. isostearate	Isostearamidopropyl morpholine, I.m. lactate
	Dimethyl myristamine, soyamine, stearamine	Isostearamidopropyl morpholine oxide
25	Dimethylamidopropylamine dimerate	Isostearamidopropyl PG-dimonium chloride
	Disodium hydrogenated cottonseed glyceride sulfosuccinate	Isostearaminopropalkonium chloride
	Disodium laureth sulfosuccinate	Isostearyl hydrolyzed animal protein
	Disodium lauroamphodiacetate	Isostearylamidopropyl dihydroxypropyl dimonium chloride
30	Distearyldimonium chloride	Lactoglobulin
	Ethyl ester of hydrolyzed keratin	Lauramidopropyl dimethylamine
	N-Ethylether-bis-1,4-(N-isostearylamidopropyl)-N,N-dimethyl ammonium chlo	Lauramidopropyl PG-dimonium chloride, I.P.c. phosphate
	Glutamic acid	Lauramine oxide
35	Glyceryl collagenate	Lauroampho PG-glycinate phosphate
	Glycine	Lauroyl hydrolyzed collagen, L.h. elastin
	Guar hydroxypropyltrimonium chloride	Lauroyl silk amino acids
	Henna (Lawsonia inermis) extract	Lauryl methyl gluceth-10 hydroxypropyl-dimonium chloride
	Hydrogenated tallowamine oxide	Lauryl phosphate, L. pyrrolidone
40	Hydrogenated tallowtrimonium chloride	Lauryldimonium hydroxypropyl hydrolyzed collagen, keratin, soy protein
	Hydrolyzed conchiorin protein	Linoleamidopropyl dimethylamine
	Hydrolyzed egg protein	Milk amino acids
	Hydrolyzed extensin	Milk protein (Lactis proteinum)
	Hydrolyzed fibronectin	Myristalkonium chloride
45	Hydrolyzed fish protein	Myristamidopropyl betaine, M. dimethylamine
	Hydrolyzed keratin	Myrtrimonium bromide
	Hydrolyzed lactalbumin	Oat (Avena sativa) protein
	Hydrolyzed milk protein	Oleamide
	Hydrolyzed oats	Oleamidopropyl betaine, O. dimethylamine
50	Hydrolyzed reticulin	
	Hydrolyzed soy protein	
	Hydrolyzed sweet almond protein	
	Hydrolyzed wheat protein/PVP copolymer	
	Hydrolyzed wheat protein polysiloxane polymer	

	Oleamidopropyl dimethylamine hydrolyzed collagen		Rice peptide
	Oleamidopropylamine oxide		Ricinoleamidopropyl-dimonium ethosulfate
	Oleamine		Ricinoleamidopropyl betaine
5	Oleamine oxide		Ricinoleamidopropyl dimethylamine lactate
	Oleoyl sarcosine		Ricinoleamidopropyl ethyldimonium ethosulfate
	Oleyl betaine		Ricinoleamidopropyltrimonium chloride
	Oleyl dimethylamidopropyl ethonium ethosulfate		Ricinoleamidopropyltrimonium ethosulfate
	Palmitamidopropyl betaine		Silicone quaternium-3, -4
10	Palmitamidopropyl dimethylamine		Silk amino acids
	Palmitamine, P. oxide		Sodium/TEA-lauroyl collagen amino acids
	Panthenyl hydroxypropyl steardimonium chloride		Sodium/TEA-lauroyl hydrolyzed keratin
	PEG-2 milk solids		Sodium/TEA-lauroyl keratin amino acids
	PEG-2 oleammonium chloride		Sodium citrate
15	PEG-3 lauramine oxide		Sodium cocoyl hydrolyzed soy protein
	PEG-5 stearyl ammonium lactate		Sodium hydrogenated tallow dimethyl glycinate
	PEG-15 cocomonium chloride		Sodium lauroyl collagen, keratin amino acids
	PEG-15 cocopolyamine		Sodium lauroyl wheat amino acids
	PEG-15 tallowmonium chloride		Sodium stearoamphoacetate
20	PEG-27		Soluble keratin, wheat protein
	PEG-40		Soyamide DEA
	PEG-85 lanolin		Soyamidopropyl benzyldimonium chloride
	PEG-7000		Soyamidopropyl betaine, S. dimethylamine
	Polydimethicone copolyol		Soyamidopropyl ethyldimonium ethosulfate
25	Polymethacrylamidopropyltrimonium chloride		Soyethyl morpholinium ethosulfate
	Polyoxyethylene dihydroxypropyl linoleaminium chloride		Soyethyldimonium ethosulfate
	Polyquaternium-2, -5, -6, -11, -16		Stearamide MEA
	Polyquaternium-17, -18, -24, -29, -44		Stearamidoethyl diethylamine, ethanolamine
30	Potassium dimethicone copolyol panthenyl phosphate		Stearamidopropyl benzyl dimonium chloride
	Potassium lauroyl collagen amino acids		Searamidopropyl cetearyl dimonium tosylate
	Potassium lauroyl hydrolyzed soy protein		Stearamidopropyl dimethylamine stearate
	Potassium lauroyl wheat amino acids		Stearamidopropyl ethyldimonium ethosulfate
35	Potassium stearoyl hydrolyzed collagen		Stearamidopropyl morpholine lactate
	PPG-5 lanolin alcohol ether		Stearamidopropyl PG-dimonium chloride
	PPG-9 diethylmonium chloride		phosphate
	PPG-20 lanolin alcohol ether		Stearmine oxide
	Proline		Steardimonium hydroxypropyl hydrolyzed collagen, keratin
40	Propylene glycol stearate		Steardimonium panthenol
	PVP/dimethiconylacrylate/polycarbamyl/polyglycol ester		Stearoyl amidoethyl diethylamine
	PVP/dimethylaminoethylmethacrylate copolymer		Steartrimonium bromide
45	PVP/dimethylaminoethylmethacrylate/polycarbamyl/polyglycol ester		Stearyl dimethicone
	PVP/hydrolyzed wheat protein copolymer		Tallowamidopropyl dimethylamine
	Quaternium-22, -26, -33, -61, -62, -70, -80		Tetramethyl trihydroxy hexadecane
	Quaternium-76 hydrolyzed collagen		TEA-cocoyl hydrolyzed collagen
50	Rapeseedamidopropyl benzyldimonium chloride		Trachea hydrolysate
	Rapeseedamidopropyl epoxypropyl dimonium chloride		Tricetylmonium chloride
	Rapeseedamidopropyl ethyldimonium ethosulfate		Tridecyl salicylate
			Triethonium hydrolyzed collagen ethosulfate
			Wheat germamidopropalkonium chloride
			Wheat germamidopropyl dimethylamine lactate
			Wheat germamidopropyl ethyldimonium ethosulfate
			Wheat peptide

	Yeast powder, deproteinated	Ammonium laureth sulfate
	<u>Coupling agent</u>	Ammonium lauryl sulfate
	Acetyl monoethanolamine	Capramide DEA
5	Butyloctanol	Cocamidopropyl dimethylamine lactate
	Myreth-3	Decyl glucoside
	Oleyl alcohol	Decyltetradeceth-25
	PPG-10 butanediol	DEA lauryl sulfate
	PPG-10 cetyl ether	Diamyl sodium sulfosuccinate
10	PPG-10 oleyl ether	Dicyclohexyl sodium sulfosuccinate
	PPG-15 stearyl ether	Diisobutyl sodium sulfosuccinate
	PPG-22 butyl ether	Disodium caproamphodiacetate
	PPG-23 oleyl ether	Disodium caproamphodipropionate
	PPG-50 oleyl ether	Disodium capryloamphodiacetate
15	Trideceth-7 carboxylic acid	Disodium capryloamphodipropionate
	<u>Denaturant</u>	Disodium cetearyl sulfosuccinate
	Brucine sulfate	Disodium cocamido MEA-sulfosuccinate
	Denatonium benzoate, saccharide	Disodium cocamido MIPA-sulfosuccinate
20	Nicotine sulfate	Disodium cocoamphodipropionate
	Sucrose octaacetate	Disodium deceth-6 sulfosuccinate
	Thymol	Disodium isodecyl sulfosuccinate
	<u>Dental powder</u>	Disodium lauramido MEA-sulfosuccinate
25	Dicalcium phosphate	Disodium lauramido PEG-2 sulfosuccinate
	Silica	Disodium laureth sulfosuccinate
	Sodium monofluorophosphate	Disodium lauroamphodiacetate
	Stannous fluoride	Disodium lauroamphodipropionate
30	<u>Deodorant</u>	Disodium lauryl sulfosuccinate
	Abietic acid	Disodium myristamido MEA-sulfosuccinate
	Azadirachta indica extract	Disodium nonoxynol-10 sulfosuccinate
	Chlorophyllin-copper complex	Disodium oleamido PEG-2 sulfosuccinate
	Eugenia jambolana extract	Disodium PEG-4 cocoamido MIPA-sulfosuccinate
35	Farnesol	Disodium ricinoleamido MEA-sulfosuccinate
	Fermented vegetable	Disodium tallowiminodipropionate
	Mauritia flexosa extract	Dodecylbenzene sulfonic acid
	Salvia miltiorrhiza extract	Dodoxynol-6, -9
	Sodium aluminum chlorohydroxy lactate	Isopropylamine dodecylbenzenesulfonate
40	Spondias amara extract	Isostearamidopropyl betaine
	Triethyl citrate	Isosteareth-6 carboxylic acid
	Zinc phenol sulfonate, Z. ricinoleate	Isostearoamphopropionate
	<u>Depilatory</u>	Isostearyl hydroxyethyl imidazoline
45	Barium sulfide	Lauramidopropylamine oxide
	Beeswax, oxidized	Laureth-11
	Calcium thioglycolate	Lauroampho PG-glycinate phosphate
	L-cysteine HCL	Lauryl glucoside, L. phosphate
	Potassium thioglycolate	Magnesium laureth sulfate, M. lauryl sulfate
50	Sodium thioglycolate	Magnesium PEG-3 cocamide sulfate
	Thioglycerin	MEA-dodecylbenzenesulfonate
	<u>Detergent</u>	MEA-laureth sulfate
		MEA-lauryl sulfate
		MIPA-lauryl sulfate
		Myristamine oxide
		Myristic acid
		Nonoxynol-10

	PEG-25 castor oil	Behenamidopropyl dihydroxypropyl dimonium chloride
	PEG-30 dipolyhydroxystearate	Behenoxy dimethicone
	PEG-40 hydrogenated castor oil PCA isostearate	Behenyl alcohol, B. behenate
	PEG-60 shea butter glycerides	Behenyl erucate, B. isostearate
5	Poloxamer 101, 122, 181, 182, 184	Benzyl laurate
	Polyglyceryl-2 sesquiisostearate	Bladderwrack (<i>Fucus vesiculosus</i>) extract
	Polyglyceryl-3 diisostearate, oleate	Borage (<i>Borago officinalis</i>) seed oil
	Polyglyceryl-5 distearate	Borageamidopropyl phosphatidyl PG-dimonium chloride
10	Polyglyceryl-6 mixed fatty acids	Brain extract
	Polyglyceryl-10 diisostearate, distearate	Brazil nut (<i>Bertholletia excelsa</i>) oil
	Polyglyceryl-10 decaoleate	Butyl myristate, oleate, stearate
	Polyhydroxystearic acid	Butyloctanol
	Polysorbate 40, 80	Butyloctyl oleate
15	Potassium polyacrylate	C12-13, C12-16, C14-15 alcohols
	PPG-3 PEG-6 oleyl ether	C12-15 alcohols octanoate
	PPG-9 diethylmonium phosphate	C12-15 alkyl benzoate
	PPG-12/SMDI Copolymer	dl-C12-15 alkyl fumarate
	PPG-15 stearyl ether	C12-15 alkyl lactate
20	PPG-25, PPG-40 diethylmonium chloride	Camellia kissi oil
	PPG-51/SMDI Copolymer	Tea (<i>Camellia sinensis</i>) oil
	PVP/eicosene copolymer	C10-30 cholesterol/lanostearol esters
	PVP/hexadecene copolymer	Canola oil
	Rapeseed oil, ethoxylated high erucic acid	Caprylic/capric triglyceride
	Ricinoleyl alcohol	Caprylic/capric triglyceride PEG-4 esters
25	Sodium ceteth-13-carboxylate	Caprylic/capric/lauric triglyceride
	Sodium lignosulfonate, S. polymethacrylate	Caprylic/capric/linoleic triglyceride
	Sodium polynaphthalenesulfonate	Caprylic/capric/oleic triglycerides
	Sorbitan oleate	Caprylic/capric/stearic triglyceride
	Steareth-10	Caprylic/capric/succinic triglyceride
30	Tricontanyl PVP	Capsicum frutescens oleoresin
	Triisostearin PEG-6 esters	Carrot (<i>Daucus carota sativa</i>) oil
	Trioctylododecyl citrate	Cashew (<i>Anacardium occidentale</i>) nut oil
	Emollient	Castor (<i>Ricinus communis</i>) oil
35	Acetylated glycol stearate	Cetearyl behenate, C. candelillate
	Acetylated hydrogenated lanolin	Cetearyl isononanoate, C. octanoate
	Acetylated hydrogenated lard glyceride	Cetearyl palmitate, C. stearate
	Acetylated hydrogenated vegetable glyceride	Ceteth-10
	Acetylated lanolin, A.I. alcohol	Cetostearyl stearate
40	Acetylated lard glyceride	Cetyl C12-15 pareth-9 carboxylate
	Acetylated monoglycerides	Cetyl acetate, C. alcohol
	Acetylated palm kernel glycerides	Cetyl esters, C. lactate
	Aleurites moluccana ethyl ester	Cetyl myristate, C. octanoate
	Allantoin	Cetyl oleate, C. palmitate
45	Aluminum/magnesium hydroxide stearate	Cetyl PPG-2 isodeceth-7 carboxylate
	AMP-isostearoyl hydrolyzed soy protein	Cetyl ricinoleate, C. stearate
	Apricot (<i>Prunus armeniaca</i>) kernel oil	Cetyl stearyl octanoate
	Arachidyl behenate	Chia (<i>Salvia hispanica</i>) oil
	Argania spinosa oil	Cholesteric esters
50	Avocado (<i>Persea gratissima</i>) oil, unsaponifiables	Cholesterol
	Avocado oil ethyl ester	Cholesteryl/beheryl/octyldodecyl lauroyl glutamate
	Babassu (<i>Orbignya oleifera</i>) oil	
	Batyl isostearate, B. stearate	

Oleoamphohydroxypropyl sulfonate
 Oleth-12, -15
 Oleyl betaine
 Palmitamidopropyl betaine
 5 PEG-10 glyceryl stearate
 PEG-15 glyceryl stearate
 PEG-25 glyceryl isostearate
 Potassium cocoyl hydrolyzed collagen
 Sodium caproamphoacetate
 10 Sodium cocoamphoacetate
 Sodium cocoamphopropionate
 Sodium cocomonoglyceride sulfate
 Sodium cocoyl hydrolyzed soy protein
 Sodium cocoyl isethionate
 15 Sodium C12-15 pareth-25 sulfate
 Sodium C14-16 olefin sulfonate
 Sodium C14-17 alkyl secsulfonate
 Sodium deceth sulfate
 Sodium decyl diphenyl ether sulfonate
 20 Sodium dodecylbenzenesulfonate
 Sodium dodecyldiphenyl ether sulfonate
 Sodium iodate
 Sodium laureth-2 sulfate
 Sodium laureth-3 sulfate
 25 Sodium laureth-7 sulfate
 Sodium laureth-12 sulfate
 Sodium laureth-13-carboxylate
 Sodium laureth sulfate
 Sodium lauriminodipropionate
 30 Sodium lauroamphopropionate
 Sodium lauroyl methyl alaninate
 Sodium lauryl phosphate, S.I. sulfate
 Sodium lauryl sulfoacetate
 Sodium methyl oleoyl taurate
 35 Sodium methyl cocoyl taurate
 Sodium methyl lauroyl taurate
 Sodium methyl naphthalenesulfonate
 Sodium myreth sulfate
 Sodium myristyl sulfate
 40 Sodium octyl sulfate, oleyl sulfate
 Sodium POE alkyl ether acetate
 Sodium trideceth-7 carboxylate
 Sodium trideceth sulfate
 Sodium tridecyl sulfate
 45 Steareth-11, -30
 TEA-dodecylbenzenesulfonate
 TEA-laureth sulfate
 TEA-lauryl sulfate
 TEA-palm kernel sarcosinate
 50 TEA-PEG-3 cocamide sulfate
 Undecylenamidopropyl betaine

Disinfectant

Benzalkonium chloride
 Chlorophene
 Didecyldimonium chloride
 Myristalkonium saccharinate
 Shikonin
 Sodium capryloamphoacetate
 Tea tree (*Melaleuca alternifolia*) oil
 p-Tertarylphenol

Dispersant

Alkylated polyvinylpyrrolidone
 C20-40, C30-50, C40-60 alcohols
 Castor (*Ricinus communis*) oil
 Cetareth-20
 Cetyl PPG-2 isodeceth-7 carboxylate
 Cholesteryl/beheryl/octyldodecyl lauroyl
 glutamate
 Decaglycerol monodioleate
 Diisocetyl dodecanedioate
 Diisostearyl adipate
 Dimethicone copolyol methyl ether
 Dioctyldodecyl dimer diilinoleate
 Dioctyldodecyl dodecanedioate
 Ethyl hydroxymethyl oleyl oxazoline
 Glyceryl caprylate, G. caprylate/caprate
 Glyceryl diisostearate
 Hydrogenated castor oil, H. lecithin
 Hydrogenated tallow glycerides
 Isobutylene/MA copolymer
 Isocetyl alcohol
 Isopropyl C12-15-pareth-9-carboxylate
 Isostearyl neopentanoate
 Lanolin acid
 Laureth-4, -6, -16
 Melanin
 Nonoxynol-2, -18, -20, -30, -40
 Octoxynol-5, -10
 Octoxynol 16, 30, 40, 70
 Octyldodeceth-5
 Octyldodecyl/dimethicone copolyol citrate
 Oleth-40
 Oleyl alcohol
 PEG-5 castor oil, glyceryl sesquioleate
 PEG-6 beeswax
 PEG-8/SMDI copolymer
 PEG-9 castor oil, oleate, stearate
 PEG-10 dioleate, stearamine
 PEG-12 beeswax
 PEG-12 glyceryl dioleate, laurate
 PEG-15 castor oil
 PEG-20 almond glycerides
 PEG-20 glyceryl isostearate
 PEG-20 sorbitan triisostearate

	Cholesteryl hydroxystearate	Dimethiconol stearate
	Cholesteryl stearate	Dimethyl lauramine oleate
	Choleth-24	Diethyl adipate
	C18-70 Isoparaffin	Diethyl dimer dilinoleate
5	C10-18, C12-18 triglycerides	Diethylcyclohexane
	C12-15 linear alcohols 2-ethylhexanoate	Diethyl dodecyl dimer dilinoleate
	Cocamidopropyl PG-dimonium chloride	Diethyl dodecyl dodecanedioate
	Cocoa (Theobroma cacao) butter	Diethyl malate, D. sebacate, succinate
	Coco-caprylate/caprate	Dipentaerythritol fatty acid ester
10	Coco-rape seed oil	Dipentaerythrityl hexacaprylate/hexacaprate
	Coconut (Cocos nucifera) oil	Dipentaerythrityl hexahydroxystearate/isostearate
	Cocoyl hydrolyzed soy protein	Distearyl dimethylamine dilinoleate
	Collagen hthalate	Ditridecyl adipate
	Colloidal oatmeal	Dog rose (Rosa canina) hips oil
15	Comfrey (Symphytum officinale) leaf extract	Egg (Ovum) yolk extract
	Corn (Zea mays) oil	Emu (Dromiceius) oil
	Corn poppy (Papaver rhoeas) extract	Erucyl erucate
	Cottonseed (Gossypium) oil	Ethyl avocadate
	Cuttlefish extract	Ethylhexyl isopalmitate
20	Cyclomethicone	2-Ethylhexyl isostearate
	Deceth-4 phosphate	Ethyl linoleate, E. myristate
	Decyl oleate	Ethyl myristate, E. myristate
	Decyltetradecanol	Ethyl oleate, E. olivate
	Dialkyldimethylpolysiloxane	Evening primrose (Oenothera biennis) extract, oil
25	Dibutyl sebacate	Glycereth-4,5-lactate
	Dicapryl adipate	Glycereth-5 lactate
	Dicapryl ether, D. maleate	Glycereth-7 benzoate
	Diethylene glycol diisononanoate	Glycereth-7 diisononanoate
	Diethylene glycol dioctanoate	Glycereth-7 triacetate
30	bis-Diglyceryl/caprylate/caprate/isostearate/ hydroxystearate/adipate	Glycereth-7 trioctanoate
	bis-Diglyceryl/caprylate/caprate/isostearate/ stearate/hydroxystearate/adipate	Glycereth-12, -26
	Dihydroabietyl behenate	Glycerol tricaprylate/caprate
35	Dihydroxyethyl tallowamine oleate	Glycerol adipate, G. dioleate
	Diisobutyl adipate	Glycerol isostearate, G. lanolate
	Diisocetyl adipate, dodecanedioate	Glycerol linoleate, G. monopyroglutamate
	Diisodecyl adipate	Glycerol myristate, G. oleate
	Diisopropyl adipate, dimer dilinoleate	Glycerol ricinoleate
40	Diisopropyl sebacate	Glycerol triacetyl hydroxystearate
	Diisostearoyl trimethylolpropane siloxy silicate	Glycerol triacetyl ricinoleate
	Diisostearyl adipate	Glycosaminoglycans
	Diisostearyl dimer dilinoleate	Glycosphingolipids
	Diisostearyl fumarate, D. malate	Gold of Pleasure oil
45	Dilinoleic acid	Grape (Vitis vinifera) seed oil
	Dimethicone	Hazel (Corylus avellana) nut oil
	Dimethicone copolyol	Helianthus annuus ethyl ester
	Dimethicone copolyol acetate, D.c. almondate	Hexadecyl isopalmitate
		Hexamethyldisiloxane
50	Dimethicone copolyol isostearate, D.c. lactate	hexyl laurate
	Dimethicone copolyol methyl ether	hexyldecanol
	Dimethicone copolyol phthalate	Hexyldecyl stearate
	Dimethicone propylethylenediamine behenate	honey extract
		Hybrid safflower (Carthamus tinctorius) oil
		Hybrid sunflower (Helianthus annuus) oil

	Hydrogenated C6-14 olefin polymers	Isosorbide laurate
	Hydrogenated castor oil	Isostearic acid
	Hydrogenated castor oil laurate	Isostearyl alcohol
	hydrogenated coconut oil	Isostearyl behenate, I. benzoate
5	Hydrogenated cottonseed oil	Isostearyl diglyceryl succinate
	Hydrogenated C12-18 triglycerides	Isostearyl erucate, I. erucyl erucate
	Hydrogenated lanolin	Isostearyl isostearate, I. lactate
	Hydrogenated lanolin, distilled	Isostearyl malate, I. myristate
	Hydrogenated lecithin	Isostearyl neopentanoate, palmitate
10	Hydrogenated milk lipids	Isostearyl stearoyl stearate
	Hydrogenated mink oil	Isostearylamidopropyl dihydroxypropyl dimonium chloride
	Hydrogenated palm kernel glycerides	Isotridecyl isononanoate
	Hydrogenated palm oil	Isotridecyl myristate
	Hydrogenated polyisobutene	Jojoba (<i>Buxus chinensis</i>) oil
15	Hydrogenated soybean oil	Jojoba butter, J. esters
	Hydrogenated starch hydrolysate	Jojoba oil, synthetic
	Hydrogenated tallow glyceride	Kukui (<i>Aleurites molaccana</i>) nut oil
	Hydrogenated tallow glyceride lactate	Lactamide DGA
	Hydrogenated turtle oil	Laneth-10 acetate
20	Hydrogenated vegetable glycerides	Lanolin, L. acid
	Hydrogenated vegetable oil	Lanolin alcohol, L. oil
	Hydrolyzed collagen	Lanolin, ultra anhydrous
	Hydrolyzed conchiorin protein	Lanolin wax
	Hydrolyzed keratin	Lanostearol
25	Hydrolyzed mushroom (<i>Tricholoma matsutake</i>) extract	Lard glyceride
	Hydrolyzed oat protein	Laureth-2, -3
	Hydroxylated lanolin	Laureth-2 acetate, L. benzoate
	Hydroxylated milk glycerides	Laureth-2-octanoate
30	Hydroxystearic acid	Lauric/palmitic/oleic triglyceride
	_____ butter	Lauryl behenate, L. lactate
	Isobutyl palmitate, I. stearate	Lauryl phosphae
	Isocetyl behenate, I. octanoate	Lauryldimethylamine isostearate
	Isocetyl palmitate, I. salicylate	Lesquereila fendleri oil
35	Isocetyl stearate	Linoleic acid
	Isodeceth-2 cocoate	Macadamia ternifolia nut oil
	Isodecyl citrate, I. cocoate	Maleated soybean oil
	Isodecyl isononanoate, I. laurate	Mango (<i>Magnifera indica</i>) oil, seed oil
	Isodecyl neopentanoate	Mango kernel oil
40	Isodecyl octanoate, I. oleate	Meadowfoam (<i>Limnanthes alba</i>) seed oil
	Isodecyl stearate	Menhaden (<i>Brevoortia tyrannus</i>) oil
	Isododecane	Methyl acetyl ricinoleate
	Isoeicosane	Methyl gluceth-20
	Isohexadecane	Methyl gluceth-20 benzoate, M.g. distearate
45	isononyl isononanoate	Methyl hydroxystearate, M. ricinoleate
	Isopentyldiol	Microcrystalline wax
	Isopropyl avocadate	Mineral oil (<i>Paraffinum liquidum</i>)
	Isopropyl C12-15-pareth-9-carboxylate	Mink oil
	Isoproyl isostearate	Musk rose (<i>Rosa moschata</i>) oil
50	Isopropyl lanolate, I. linoleate	Myreth-3
	Isopropyl myristate, I. palmitate	Myreth-3 caprate, M. laurate
	Isopropyl PPG-2-isodeceth-7 carboxylate	Myreth-3 myristate, M. octanoate
	Isopropyl stearate	Myristyl alcohol, M. lactate

- Myristyl myristate, M. octanoate
 Myristyl propionate, M. stearate
 Neatsfoot oil
 5 Neem (Melia azadirachta) seed oil
 Neopentyl glycol dicaprate
 Neopentyl glycol dicaprate/dicaprylate
 Neopentyl glycol diisooctanoate
 Neopentyl glycol dioctanoate
 Oat (Avena sativa) bran extract, extract, flour
 10 Octacosanyl stearate
 Octyl cocoate
 Octyl hydroxystearate, O. isononanoate
 Octyl neopentanoate, O. octanoate
 Octyl oleate, O. palmitate
 15 Octyl pelargonate, O. stearate
 Octyldecanol
 Octyldodecanol
 Octyldodecyl behenate, O. benzoate
 Octyldodecyl erucate, O. myristate
 20 Octyldodecyl oleate, O. ricinoleate
 Octyldodecyl stearate
 bis-Octyldodecyl stearyl dimer dilinoleate
 Octyldodecyl stearyl stearate
 Oleamine oxide
 25 Oleic/palmitoleic/linoleic glycerides
 Oleic alcohol
 Oleostearine
 Oleyl alcohol, O. erucate, O. oleate
 Olive (Olea europae) oil
 30 Orange (Citrus aurantium dulcis) peel wax
 Orange roughy (Hoplostethus atlanticus) oil
 Palm (Elaeis guineensis) oil
 Palm kernel glycerides
 Palmitic acid
 35 Panthenyl triacetate
 Partially hydrogenated canola oil
 Partially hydrogenated soybean oil
 Peach (Prunus persica) extract
 Peanut (Arachis hypogaea) oil
 40 PEG-2 diisononanoate, P. dioctanoate
 PEG-2 milk solids
 PEG-4
 PEG-4 diheptanoate, P. dilaurate
 PEG-5 C8-12 alcohols citrate
 45 PEG-5 C14-18 alcohols citrate
 PEG-5 hydrogenated castor oil
 PEG-5 hydrogenated castor oil triisostearate
 PEG-6
 PEG-6 capric/caprylic glycerides
 50 PEG-7 glyceryl cocoate
 PEG-8
 PEG-8 dilaurate, P. dioleate
 PEG-8/SMDI copolymer
 PEG-9 stearyl stearate
 PEG-10 stearyl stearate
 PEG-12
 PEG-12 dioleate, P. palm kernel glycerides
 PEG-15 cocamine oleate/phosphate
 PEG-18
 PEG-20
 PEG-20 hydrogenated castor oil isostearate
 PEG-20 hydrogenated castor oil triisostearate
 PEG-20 hydrogenated lanolin
 PEG-24 hydrogenated lanolin
 PEG-25 PABA, P. propylene glycol stearate
 PEG-40 glyceryl laurate
 PEG-40 hydrogenated castor oil isostearate
 PEG-40 hydrogenated castor oil laurate
 PEG-40 hydrogenated castor oil triisostearate
 PEG-40 jojoba oil
 PEG-50 hydrogenated castor oil laurate
 PEG-50 hydrogenated castor oil triisostearate
 PEG-60 shea butter glycerides
 PEG-70 mango glycerides
 PEG-75
 PEG-75 lanolin, P. shea butter glycerides
 PEG-75 shorea butter glycerides
 PEG-150
 PEG/PPG-17/6 copolymer
 Pentaerythrityl dioleate
 Pentaerythrityl
 isostearate/caprate/caprylate/adipate
 Pentaerythrityl stearate
 Pentaerythrityl stearate/caprate/caprylate/adipate
 Pentaerythrityl tetracaprylate/tetracaprate
 Pentaerythrityl tetraisononanoate, P.
 tetraisostearate
 Pentaerythrityl tetralaurate, P. tetraoctanoate
 Pentaerythrityl tetraoleate, P. tetrapelargonate
 Pentaerythrityl tetrastearate
 Perfluorodecalin
 Perfluoropolymethylisopropyl ether
 Petrolatum
 Phenethyl dimethicone
 Phenyl dimethicone, P. methicone, P.
 trimethicone
 Phytantriol
 Pistachio (Pistacia vera) nut oil
 Placental enzymes
 Pollen extract
 Poloxamer 105 benzoate
 Poloxamer 182 dibenzoate
 Polybutene
 Polydecene
 Polydimethicone copolyol
 Polyethylene glycol

	Polyglyceryl-2 diisostearate, P. tetraisostearate	PPG-30
	Polyglyceryl-2 triisostearate	PPG-30 cetyl ether
	Polyglyceryl-3 diisostearate, P. oleate	PPG-40 butyl ether
	Polyglyceryl-3 stearate	PPG-50 cetyl ether, P. oleyl ether
5	Polyglyceryl-6 dioleate	PPG-51/SMDI Copolymer
	Polyglyceryl-10 decaoleate, P. decastearate	PPG-53 butyl ether
	Polyglyceryl-10 tetraoleate	Propylene glycol ceteth-3 acetate
	Polyisobutene	Propylene glycol dicaprylate
	Polyisobutene/isohexapentacontahexane	Propylene glycol dicaprylate/dicaprate
10	Polyisobutene/isooctabexacontane	Propylene glycol diisostearate, P.g. dioctanoate
	Polyisobutene/isopentacontaoctane	Propylene glycol dipelargonate
	Polyisoprene	Propylene glycol isoceteth-3-acetate
	Polyoxyethylene polyoxypropylene glycol	Propylene glycol isostearate, P.g. laurate
	Polyquaternium-2	Propylene glycol myristate
15	Polysiloxane polyalkylene copolymer	Propylene glycol myristyl ether acetate
	Polysorbate 40	Propylene glycol stearate, SE
	Potassium dimethicone copolyol phosphate	Pumpkin (Cucurbita pepo) seed oil
	PPG-2-buteth-3	Quinoa (Chenopodium quinoa) oil
	PPG-2 lanolin alcohol ether	Rapeseed (Brassica campestris) oil
20	PPG-2 myristyl ether propionate	Rice (Oryza sativa bran oil, bran wax
	PPG-3 hydrogenated castor oil	Rice fatty acid
	PPG-3 myristyl ether	Safflower (Carthamus tinctorius) oil
	PPG-5-buteth-7	Salmon (Salmo) egg extract
	PPG-5-laureth-5	Sesame (Sesamum indicum) oil
25	PPG-5 butyl ether	Shark liver oil
	PPG-5 lanolin wax	Shea butter (Butyrospermum parkii)
	PPG-5 pentaerythrityl ether	Shea butter (Butyrospermum parkii) extract
	PPG-7-buteth-10	Shea butter, ethoxylate
30	PPG-8/SMDI copolymer	Shorea stenoptera butter
	PPG-9	Silybum marianum ethyl ester
	PPG-9-buteth-12	Sitostearyl acetate
	PPG-9 butyl ether	Skin lipids
	PPG-10 butanediol, P. cetyl ether	Slippery elm extract
35	PPG-10 methyl glucose ether	Sodium C8-16 isoalkylsuccinyl lactoglobulin
	PPG-10 oleyl ether	sulfonate
	PPG-11 stearyl ether	Sodium carboxymethyl beta-glucan
	PPG-12-buteth-16	Sodium ceteth-13-carboxylate
	PPG-12-PEG-50 lanolin	Sodium dimethicone copolyol acetyl
40	PPG-12-PEG-65 lanolin oil	methyltaurate
	PPG-12/SMDI Copolymer	Sodium glyceryl oleate phosphate
	PPG-14 butyl ether	Sodium hyaluronate, S. polymethacrylate
	PPG-15 butyl ether, P. stearyl ether	Sorbeth-20
	PPG-15 stearyl ether benzoate	Sorbitan isostearate, S. palmitate
45	PPG-16 butyl ether	Sorbitan sesquioleate, S. sesquistearate
	PPG-18 butyl ether	Sorbitan trioleate
	PPG-20	Soybean (Glycine soja) oil
	PPG-20-buteth-30	Spermaceti
	PPG-20 cetyl ether	Sphingolipids
50	PPG-24-glycereth-24	Squalene
	PPG-26	Stearamidopropyl cetearyl dimonium tosylate
	PPG-27 glyceryl ether	Steareth-4 stearate
	PPG-28-buteth-35	Stearic acid, S. hydrazide
		Stearoxy dimethicone

	Stearoxymethicone/dimethicone copolymer	2-Aminobutanol
	Stearyl behenate, S. benzoate	Ammonium acrylates/acrylonitrogens copolymer
	Stearyl dimethicone, S. erucate	Arachidyl alcohol
	Stearyl heptanoate, S. propionate	Beeswax
5	Stearyl stearate	Behenamidopropyl dihydroxypropyl dimonium chloride
	Stearyl stearoyl stearate	Beheneth-5, -10, -20, -30
	Sucrose cocoate	Behenic acid
	Sunflower (<i>Helianthus annuus</i>) seed oil	Behenyl betain
	Sweet almond (<i>Prunus amygdalus dulcis</i>) oil	Borageamidopropyl phosphatidyl PG-dimonium chloride
10	Sweet cherry (<i>Prunus avium</i>) pit oil	Butyloctanol
	Synthetic jojoba oil	C12-20 acid PEG-8 ester
	Synthetic wax	C18-36 acid
	Tallow	Calcium dodecylbenzene sulfonate
	Tetradecyleicosyl stearate	Calcium protein complex
15	Tocopheryl acetate	Calcium stearate
	Tricaprin	Calcium stearoyl lactylate
	Tricaprylin	Capramide DEA
	Tricaprylyl citrate	Caprylic/capric acid
	Tricholoma matsutake extract	Caprylic/capric glycerides
20	Tridecyl behenate, T. cocoate	Castor oil, ethoxylate
	Tridecyl erucate, T. neopentanoate	Cetalkonium chloride
	Tridecyl octanoate, T. stearate	Ceteareth-2 -4 -5 -6
	Tridecyl stearoyl stearate	Ceteareth-2 phosphate
	Tridecyl trimellitate	Ceteareth-5 phosphate
25	Trihexyldecyl citrate	Ceteareth-8 -10 -11 -12
	Triisoceryl citrate	Ceteareth-10 phosphate
	Triisostearin	Ceteareth-15 -17 -20 -25
	Triisostearyl citrate	Ceteareth-27 -29 -30 -34
	Triisostearyl trilinoleate	Cetearyl alcohol
30	Trilaurin	Cetearyl glucoside
	Trilinolein	Ceteth-2 -4 -6 -10 -12 -13
	Trimethylolpropane tricaprylate/tricaprate	Ceteth-16 -20 -25 -30 -33
	Trimethylolpropane tricocoate	Cetethyldimonium bromide
	Trimethylolpropane trilaurate	Cetrimonium chloride
35	Trimyristin	Cetyl dimethicone copolyol
	Trioctanoin	Cetyl phosphate
	Trioctyldodecyl citrate	Cholesterol
	Triolein	Choleth-10 -15 -24
	Tripalmitin	Cocamide DEA, C. MEA
40	Tripropylene glycol citrate	Cocamidopropyl dimethylamine
	Tristearin	Cocamidopropyl PG-dimonium chloride phosphate
	Triundecanoin	Cocamine
	Vegetable oil	Coceth-7 carboxylic acid
	Walnut (<i>Juglans regia</i>) oil	Coconut acid
45	Wheat (<i>Triticum vulgare</i>) germ oil	Copper protein complex
	Emulsifier	Cottonseed glyceride
	Acetylated hydrogenated lard glyceride	C12-13 pareth-3 -4 -9 -23
	Acetylate hydrogenated vegetable glyceride	C16-18 pareth-3 -5.5 -13 -19
50	Acetylated monoglycerides	Cyclodextrin
	Acrylates/C10-C30 alkyl acrylate crosspolymer	Decaglycerol monodioleate
	Acrylates/vinyl isodecanoate crosspolymer	
	Acrylic acid/acrylonitrogens copolymer	

	DEA-cetareth-2-phosphate	Glyceryl ricinoleate SE
	DEA-cetyl phosphate	Glyceryl stearate, G. stearate citrate
	DEA- ϵ -cyclohexylpropyl oleate	Glyceryl stearate lactate
	DEA-oleth-3-phosphate	Glyceryl stearate SE
5	DEA-oleth-5-phosphate	Glyceryl undecylenate
	DEA oleth-10 phosphate	Glycol distearate, G. oleate
	DEA-oleth-20-phosphate	Glycol palmitate, G. stearate
	Dicetareth-10 phosphoric acid	Glycol stearate SE
	Diethanolamine	Glycolamide stearate
10	Diethylaminoethyl stearate	Glycosphingolipids
	Diglyceryl stearate malate	Hydrogenated coco-glycerides
	Dihydrocholeth-15 -20 -30	Hydrogenated cottonseed glyceride
	Dihydrogenated tallow phthalic acid amide	Hydrogenated lanolin
	Dilauryl acetyl dimonium chloride	Hydrogenated lecithin
15	Dilinoleamidopropyl dimethylamine dimethicone copolyol phosphate	Hydrogenated palm oil
	Dilinoleic acid	Hydrogenated soy glyceride
	Dimethicone copolyol almondate	Hydrogenated tallow glycerides
	Dimethicone copolyol isostearate	Hydrogenated tallow glycerides citrate
20	Dimethicone copolyol laurate	Hydroxycetyl phosphate
	Dimethicone copolyol methyl ether	Hydroxylated lanolin
	Dimethicone copolyol olivate	Hydroxylated lecithin
	Dimethicone copolyol phthalate	Hydroxyoctacosanyl hydroxystearate
	Dipalmitoylethyl hydroxyethylmonium	Hydroxypropyl-bis-
25	methosulfate	isostearylamidopropyldimonium chloride
	Dipropylene glycol	Isocetareth-8 stearate
	Disodium hydrogenated cottonseed glyceride sulfosuccinate	Isoceteth-10 stearate
	Disodium ricinoleamido MEA-sulfosuccinate	Isoceteth-20
30	Disodium stearyl sulfosuccinate	Isocetyl alcohol
	Disodium sulfosuccinamide	Isolaureth-6
	Distearyl phthalic acid amide	Isostearamidopropyl dimethylamine gluconate
	N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride	Isostearamidopropyl dimethylamine glycolate
35	Dodecylphenol-ethylene oxide condensate	Isostearamidopropyl laurylaceto-dimonium chloride
	Egg (Ovum) yolk extract	Isostearth-2 -3 -10 -12 -20 -22 -50
	Emulsifying wax NF	Isostearth-2-octanoate
	Ethoxylated fatty alcohol	Isostearth-10 stearate
	N-Ethylether-bis-1,4-(N-isostearylamidopropyl-N,N-dimethyl ammonium chlo	Isostearic acid
40	ethyl hexanediol	isostearyl diglyceryl succinate
	Euglena gracilis polysaccharide	Isostearylamidopropyl dihydroxypropyl dimonium chloride
	Glycereth-26 phosphate	Karaya (Sterculia urens) gum
	Glyceryl caprylate, G. caprylate/caprato	Laneth-5 -10 -15 -16 -20 -40
45	Glyceryl citrate/lactate/linoleate/oleate	Laneth-10 acetate
	Glyceryl cocoate, G. dilaurate	Lanolin
	Glyceryl dilaurate, G. dioleate	Lanolin alcohol
	Glyceryl distearate, G. hydroxystearate	Lanolin, ultra anhydrous
	Glyceryl isostearate, G. lanolate	Lanolin wax
50	Glyceryl laurate, G. linoleate	Lauramide DEA, L. MEA
	Glyceryl mono-di-tri-caprylate	Lauramidopropyl dimethylamine
	Glyceryl myristate, G. oleate	Lauramidopropyl PG-dimonium chloride
	Glyceryl palmitate, G. ricinoleate	Laureth-1 -2 -3 -4 -5
		Laureth-2-octanoate
		Laureth-3 phosphate

	Laureth-4 carboxylic acid	PEG-3 cocamide
	Laureth-5 carboxylic acid	PEG-3 C12-C18 alcohols
	Laureth-6 -7 -9 -11 -12	PEG-3 glyceryl isostearate
	Laureth-11 carboxylic acid	PEG-3 glyceryl triisostearate
5	Laureth-16 -20 -23 -25 -30	PEG-3 glyceryl tristearate
	Lauryl PCA	PEG-3 lanolate, P. sorbitan oleate
	Laurylmethicone copolyol	PEG-3 stearate
	Lecithin	PEG-4 dioleate, P. diisostearate
10	Linoleamidopropyl PG-dimonium chloride phosphate	PEG-4 dilaurate, P. distearate
	Lithium stearate	PEG-4 glyceryl distearate
	Magnesium sulfate hepta-hydrate	PEG-4 laurate, P. oleate
	Maleated soybean oil	PEG-4 stearate
	Methoxy PEG-17/dodecyl glycol copolymer	PEG-4 stearyl stearate
15	Methyl gluceth-20 distearate	PEG-4 tallate
	methyl glucose dioleate, M.g. sesquiisostearate	PEG-5 castor oil, P. cocamine
	Methyl glucose sesquisteate	PEG-5 C12-C18 alcohols
	MEA-laureth sulfate	PEG-5 glyceryl isostearate
	Myreth-3 -4 -7	PEG-5 glyceryl sesquioleate
20	Myreth-3 myristate	PEG-5 glyceryl stearate
	Myristamidopropyl dimethylamine	PEG-5 glyceryl triisostearate
	Nonoxynol-1 -2 -4 -5 -6 -7	PEG-5 lanolate, P. oleamine
	Nonoxynol-8 -9 -10 -11 -12 -13	PEG-5 soy sterol, P. soyamine
	Nonoxynol-14 -15 -18 -20 -30 -40 -50	PEG-5 stearamine, P. stearate
25	Nonyl nonoxynol-5 -10	PEG-5 tallow amine
	Oat (Avena sativa) flour	PEG-6 capric/caprylic glycerides
	Octoxynol-1 -3 -5 -8 -10	PEG-6 cocamide
	Octoxynol 16, 30, 40	PEG-6 C12-14 ether
	2-Octyl dodecyl alcohol	PEG-6 dilaurate, P. dioleate
30	Octyldodecanol	PEG-6 distearate, P. isostearate
	Octyldodeceth-20 -25	PEG-6 lauramide, P. laurate
	Oleamide DEA	PEG-6 oleate, P. palmitate
	Oleamidopropyl dimethylamine	PEG-6 sorbitan beeswax
	Oleamine oxide	PEG-6 sorbitan laurate
35	Oleic acid	PEG-6 sorbitan oleate
	Oleth-2 -3 -4 -5 -6 -7 -8 -9	PEG-6 sorbitan stearate
	Oleth-10 -12 -15 -20 -23	PEG-6 stearate
	Oleth-25 -30 -40 -50	PEG-6-32
	Oleth 13	PEG-6-32 stearate
40	Oleth-2 phosphate	PEG-7 glyceryl cocoate
	Oleth-3 phosphate	PEG-7 hydrogenated castor oil
	Oleth-5 phosphate	PEG-7 oleate
	Oleth-10 phosphate	PEG-7.5 tallowamine
	Oleth-20 phosphate	PEG-8
45	Palm acid	PEG-8 beeswax, P. castor oil
	Palmitamidopropyl dimethylamine	PEG-8 C12-14 ether
	Palmitic acid	PEG-8 dilaurate, P. dioleate
	PEG-2 cocamine, P. distearate	PEG-8 distearate
	PEG-2 hydrogenated tallow amine	PEG-8 glyceryl laurate
50	PEG-2 laurate, P. laurate SE	PEG-8 laurate, P. oleate
	PEG-2 oleamine, P. oleate	PEG-8, P. tallate
	PEG-2 soyamine, P. stearamine	PEG-9 castor oil
	PEG-2 stearate, P. stearate SE	PEG-9 diisostearate
		PEG-9 dioleate, P. distearate

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| | PEG-9 laurate, P. oleate | PEG-23 oleate, P. stearate |
| | PEG-9 stearate | PEG-24 hydrogenated lanolin |
| | PEG-10 castor oil, P. cocamine | PEG-25 castor oil |
| | PEG-10 coconut oil esters | PEG-25 phytosterol |
| 5 | PEG-10 C12-18 alcohols | PEG-25 propylene glycol stearate |
| | PEG-10 dioleate | PEG-25 soy stearyl, P. stearate |
| | PEG-10 glyceryl isostearate | PEG-29 castor oil |
| | PEG-10 hydrogenated castor oil | PEG-30 castor oil |
| | PEG-10 hydrogenated castor oil triisostearate | PEG-30 dipolyhydroxystearate |
| 10 | PEG-10 lanolate | PEG-30 glyceryl cocoate |
| | PEG-10 polyglyceryl-2 laurate | PEG-30 glyceryl isostearate |
| | PEG-10 sorbitan laurate | PEG-30 glyceryl laurate |
| | PEG-10 soy sterol, P. stearamine | PEG-30 glyceryl oleate |
| | PEG-10 stearate | PEG-30 glyceryl stearate |
| 15 | PEG-11 babassu glycerides | PEG-30 hydrogenated castor oil |
| | PEG-11 castor oil | PEG-30 lanolin |
| | PEG-12 dilaurate, P. dioleate | PEG-30 sorbitan tetraoleate |
| | PEG-12 distearate | PEG-32 dilaurate, P. dioleate |
| | PEG-12 glyceryl dioleate | PEG-32 distearate, P. laurate |
| 20 | PEG-12 laurate, P. oleate | PEG-32 oleate, P. stearate |
| | PEG-12 stearate, P. tallate | PEG-33 castor oil |
| | PEG-14 avocado glycerides | PEG-35 castor oil, P. stearate |
| | PEG-15 castor oil | PEG-40 castor oil |
| | PEG-15 cocamine | PEG-40 glyceryl isostearate |
| 25 | PEG-15 glyceryl isostearate | PEG-40 glyceryl laurate |
| | PEG-15 glyceryl laurate | PEG-40 glyceryl triisostearate |
| | PEG-15 glyceryl ricinoleate | PEG-40 hydrogenated castor oil |
| | PEG-15 oleamine, P. oleate | PEG-40 hydrogenated castor oil PCA isostearate |
| | PEG-15, P. stearamine | PEG-40 sorbitan diisostearate |
| 30 | PEG-15 tallow amine | PEG-40 sorbitan lanolate |
| | PEG-15 tallow polyamine | PEG-40 sorbitan tetraoleate |
| | PEG-16 | PEG-40 stearate |
| | PEG-16 hydrogenated castor oil | PEG-40/dodecyl glycol copolymer |
| | PEG-16 soy sterol | PEG-42 babassu glycerides |
| 35 | PEG-18 stearate | PEG-44 sorbitan laurate |
| | PEG-20 almond glycerides | PEG-45 palm kernel glycerides |
| | PEG-20 castor oil, P. dilaurate | PEG-45 safflower glycerides |
| | PEG-20 dioleate, P. distearate | PEG-50 lanolin, P. stearamine |
| | PEG-20 glyceryl laurate | PEG-50 stearate |
| 40 | PEG-20 glyceryl oleate | PEG-60 almond glycerides |
| | PEG-20 glyceryl stearate | PEG-60 castor oil |
| | PEG-20 glyceryl triisostearate | PEG-60 corn glycerides |
| | PEG-20 glyceryl tristearate | PEG-60 glyceryl triisostearate |
| | PEG-20 hydrogenated castor oil | PEG-60 hydrogenated castor oil |
| 45 | PEG-20 hydrogenated lanolin | PEG-60 hydrogenated castor oil isostearate |
| | PEG-20 lanolin, P. laurate | PEG-60 hydrogenated castor oil triisostearate |
| | PEG-20 oleate | PEG-60 shea butter glycerides |
| | PEG-20 methyl glucose sesquistearate | PEG-60 sorbitan tetraoleate |
| | PEG-20 sorbitan beeswax | PEG-70 mango glycerides |
| 50 | PEG-20 sorbitan isostearate | PEG-75 |
| | PEG-20 sorbitan triisostearate | PEG-75 castor oil, P. dilaurate |
| | PEG-20 sorbitan trioleate | PEG-75 dioleate, P. distearate |
| | PEG-20 stearate, P. tallow amine | PEG-75 lanolin, P. laurate |

	PEG-75 oleate	Polyglyceryl-10 trioleate
	PEG-75 shea butter glycerides	Polyoxyethylene polyoxypropylene glycol
	PEG-75 shorea butter glycerides	Polyquaternium-5, -31
	PEG-75 stearate	Polysorbate 20, 21, 40, 60, 61
5	PEG-80 sorbitan laurate	Polysorbate 65, 80, 81, 85
	PEG-90 stearate	Potassium alginate, P. cetyl phosphate
	PEG-100 castor oil	Potassium laurate, P. myristate
	PEG-100 hydrogenated castor oil	Potassium tallowate
	PEG-100 lanolin, P. stearate	PPG-1-PEG-9 lauryl glycol ether
10	PEG-120 distearate	PPG-2-cetareth-9
	PEG-150 dilaurate, P. dioleate	PPG-3 isosteareth-9
	PEG-150 distearate, P. lanolin	PPG-3 PEG-6 oleyl ether
	PEG-150 laurate, P. oleate	PPG-5-buteth-7
	PEG-150 stearate	PPG-5-ceteth-20
15	PEG-200 castor oil	PPG-5-ceteth-10 phosphate
	PEG-200 glyceryl stearate	PPG-8 oleate
	PEG-200 hydrogenated castor oil	PPG-10 cetyl ether phosphate
	PEG-200 laurate, P. oleate	PPG-12-PEG-50 lanolin
	PEG-400 laurate	PPG-15 stearyl ether
20	Phosphate esters	PPG-24-buteth-27
	Phosphated amine oxides	PPG-25 laureth-25
	Phospholipids	PPG-26-buteth-26
	Poloxamer 101, 105, 122, 123, 124	PPG-26 oleate
	Poloxamer 181, 182, 184, 185, 235, 237	PPG-36 oleate
25	Poloxamer 238, 334, 338, 407	Propylene glycol alginate, P.g. dioleate
	Polyglyceryl-2 oleate	Propylene glycol hydroxystearate
	Polyglyceryl-2 polyhydroxystearate	Propylene glycol laurate, P.g. ricinoleate
	Polyglyceryl-2 sesquiisostearate	Propylene glycol ricinoleate SE
	Polyglyceryl-2 stearate	Propylene glycol stearate
30	Polyglyceryl-2-PEG-4-distearate	Propylene glycol stearate, SE
	Polyglyceryl-2-PEG-4-stearate	Quaternium-33
	Polyglyceryl-3 diisostearate, P. dioleate	Rapeseedamidopropyl ethyldimonium ethosulfate
	Polyglyceryl-3 distearate	Rice (Oryza sativa) bran wax
	Polyglyceryl-3 methylglucose distearate	Ricinoleamide DEA
35	Polyglyceryl-3 oleate, P. polyricinoleate	Ricinoleic acid
	Polyglyceryl-3 stearate	Saponins
	Polyglyceryl-4 oleate, P. stearate	Selenium protein complex
	Polyglyceryl-6 dioleate, P. distearate	Silicone quaternium-5, -6
	Polyglyceryl-6 laurate, P. myristate	Sodium acrylates vinyl isodecanoate
40	Polyglyceryl-6 oleate, P. polyricinoleate	crosspolymer
	Polyglyceryl-6 stearate	Sodium caproyl lactylate
	Polyglyceryl-8 oleate	Sodium carbomer
	Polyglyceryl-10 decaoleate	Sodium cetyl sulfate
	Polyglyceryl-10 diisostearate	Sodium C12-15 pareth-15 sulfonate
45	Polyglyceryl-10 dioleate, P. dipalmitate	Sodium isostearoyl lactylate
	Polyglyceryl-10 distearate, P. isostearate	Sodium laureth-17 carboxylate
	Polyglyceryl-10 laurate, P. linoleate	Sodium lauroyl lactylate
	Polyglyceryl-10 mixed fatty acids	Sodium lauryl sulfate
	Polyglyceryl-10 myristate	Sodium nonoxynol-6 phosphate
50	Polyglyceryl-10 oleate	Sodium oeryl sulfate
	Polyglyceryl-10 pentastearate	Sodium oleate
	Polyglyceryl-10 stearate	Sodium oleyl sulfate
	Polyglyceryl-10 tetraoleate	Sodium phosphate

Sodium stearoyl lactylate
 Sorbeth-20
 Sorbitan isostearate, S. laurate
 Sorbitan oleate, S. palmitate
 5 Sorbitan sesquiisostearate
 Sorbitan sesquioleate, S. sesquisteate
 Sorbitan stearate, S. triisostearate
 Sorbitan trioleate, S. tristearate
 Soyamidopropyl dimethylamine
 10 Soyamine
 Stearamide DEA
 Stearamide DIBA-stearate
 Stearamidoethyl diethylamine
 Stearamidopropyl dimethylamine, lactate
 15 Stearamidopropyl PG-dimonium chloride
 phosphate
 Stearamine
 Stearamine oxide
 Steareth-2, -4, -6, -7, -10, -11, -13
 20 Steareth-2 phosphate
 Steareth-15, -20, -21, -30, -100
 Stearic acid
 Sucrose cocoate, S. distearate
 Sucrose stearate
 25 Sythetic beeswax
 Tallow glyceride, acetylated hydrogenated
 Tallowamide DEA
 Tallowamidopropyl dimethylamine
 Talloweth-6
 30 Tetrasodium dicarboxyethyl stearyl
 sulfosuccinamide
 TEA-acrylates/acrylonitrogens copolymer
 Tissue extract
 Triceteareth-4 phosphate
 35 Trideceth-3, -5, -6, -7, -8
 Trideceth-9, -10, -12, -15
 Tridecyl ethoxylate
 Triethanolamine
 Trilaureth-4 phosphate
 40 Triolein
 Trisodium HEDTA
 Tristearin

Enzyme
 45 Fermented vegetable
 Ganoderma lucidum oil
 Lipase
 Papain
 Soy (Glycine soja) protein
 50 Superoxide dismutase

Essentail oil
 Aesculus chinensis extract

Artemisia apiacea extract
 Brassica rapa-depressa extract
 Caraway (Carum carvi) oil
 Cardamon (Elettaria cardamomum) oil
 Clove (Eugenia caryophyllus) oil
 Eclipta alba extract
 Eucalyptus globulus oil
 Eupatorium fortunei extract
 Euterpe precatoria extract
 Hierochloe odorata extract
 Kadsura heteliloca extract
 Ligustrum lucidum extract
 Lysimachia foenum-graecum extract
 Melaleuca bracteata extract
 Melaleuca hypercifolia extract
 Melaleuca symphyocarp extract
 Melaleuca uncinata extract
 Melaleuca wilsonii extract
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Paulownia imperialis extract
 Rosemary (Rosmarinus officinalis) oil
 Selinum spp. extract
 Trichomonas japonica extract
 Withania somniferum extract
 Yuzu oil
 Ziziphus jujuba extract

Exfoliant

Apricot (Prunus armeniaca) kernel powder
 Glycolic acid
 Jojoba (Buxus chinensis) seed powder
 Lactic acid Papain
 PEG 11-Avocado Glycerides
 Willow (Salix alba) bark extract

Fiber

Corn (Zea mays) cob powder
 Nylon-66
 Oat (Avena sativa) bran, meal
 Rayon

Film former

Acetylated lanolin
 Acrylates/hydroxyesters acrylates copolymer
 Acrylate/octylarylamide copolymer
 Acrylate copolymer alkylated
 polyvinylpyrrolidone
 Ammonium acrylates/acrylonitrogens copolymer
 Betaglucon
 Bladderwrack (Fucus vesiculosus) extract
 Carboxymethylchitosan
 N,O-Carboxymethylchitosonium

Chitosan lactate
 Collagen
 Collagén phthalate
 Colloidal oatmeal
 5 Desamido collagen
 Diisostearoyl trimethylolpropane siloxy silicate
 DMHF
 Ethyl ester of hydrolyzed silk
 Ethylcellulose
 10 Gellan gum
 Glycerin/diethylene glycol/adipate crosspolymer
 High beta-glucan barley flour
 Hydrolyzed collagen
 Hydrolyzed keratin
 15 Hydrolyzed oat protein
 Hydrolyzed pea protein
 Hydrolyzed reticulin
 Hydrolyzed RNA
 Hydrolyzed silk
 20 Hydrolyzed soy protein
 Hydrolyzed wheat protein
 Hydrolyzed wheat protein/dimethicone copolyol
 phosphate copolymer
 Hydrolyzed wheat protein/PVP copolymer
 25 Hydroxypropylcellulose
 Hydroxypropyltrimonium gelatin
 Jojoba (*Buxus chinensis*) oil
 Lactoglobulin
 Myristoyl hydrolyzed collagen
 30 Nitrocellulose
 Oat (*Avena sativa*) extract, protein
 Polyethylene, ionomer
 Polyquaternium-6, -7, -11, -22, -39
 Polyvinyl acetate, P. alcohol
 35 PVM/MA decadiene crosspolymer
 PVP/Dimethiconylacrylate/polycarbamyl/polyglycol ester
 40 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/dimethylaminoethylmethacrylate/
 polycarbamyl/polyglycol ester
 PVP/eicosene copolymer
 PVP/hexadecene copolymer
 45 PVP/hydrolyzed wheat protein copolymer
 Rice peptide
 Sericin
 Shea butter (*Butyrospermum parkii*)
 Shellac
 50 Sodium C12-15 parath-7 sulfonate
 Sodium hyaluronate
 Souble collagen
 Souble keratin

Souble wheat protein
 TEA-acrylates/acrylonitrogens copolymer
 Tosylamide/epoxy resin
 Tricontanyl PVP
 Triethonium hydrolyzed collagen ethosulfate
 Wheat peptide

Fixative

Acrylates copolymer
 Adipic acid/dimethylaminohydroxypropyl
 diethylene triamine copolymer
 AMP-acrylates copolymer
 Hydrolyzed zein
 Methacryloyl ethyl betaine/acrylates copolymer
 Methyl rosinat
 Polyquaternium-4, -10, -29
 PPG-20 methyl glucose ether
 Sodium polystyrene sulfonate

Flavor (aroma)

Benzaldehyde
 Caraway (*Carum carvi*) oil
 Cardamon (*Elettaria cardamomum*) oil
 Cinnamon (*Cinnamomum casia*) oil
 Clove (*Eugenia caryophyllus*) oil
 Ethyl vanillin
 Eucalyptus globulus oil
 Flavor (aroma)
 Glutamic acid
 Glycyrrhetic acid
 Glycyrrhizic acid
 Glycyrrhizin, ammoniated
 Methyl salicylate
 Orange (*Citrus aurantium dulcis*) oil
 Peppermint (*Mentha piperita*) oil
 Rosemary (*Rosmarinus officinalis*) oil
 Sodium glycyrrhizinate
 Thymol Vanillin

Foam booster

Alkyldimethylamine oxide
 Babassuamidopropyl betaine
 Babassuamidopropylamine oxide
 Caprylyl pyrrolione
 Carrageenan (*Chondrus crispus*)
 Cocamide DEA, C. MIPA
 Cocamidopropyl betaine
 Cocamidopropyl dimethylamine lactate
 Cocamidopropyl hydroxysultaine
 Coco-betaine
 Coco/oleamidopropyl betaine
 Cocoyl amido hydroxy sulfo betaine
 Cocoyl monoethanolamide ethoxylate

5 DEA-hydrolyzed lecithin
 Dimethyl lauramine
 Disodium cocamido MEA-sulfosuccinate
 Disodium cocoamphodiacetate
 Disodium lauramido MEA-sulfosuccinate
 Disodium laureth sulfosuccinate
 Lauramide MIPA
 Lauramidopropyl betaine
 Lauryl betaine
 10 Myristamidopropyl dimethylamine dimethicone
 copolyol phosphate
 Myristamine oxide
 Octyldodecyl benzoate
 Oleamide DEA, O. MIPA
 15 Oleyl betain
 Palm kernelamide DEA
 PEG-3 lauramine oxide
 PPG-15 stearyl ether benzoate
 PEG-7000
 20 Sodium cocoamphoacetate
 Sodium cocoyl isethionate
 Sodium laureth sulfate
 Sodium lauroyl wheat amino acids
 Sodium octoxynol-2 ethane sulfonate
 25 Soyamidopropyl betaine
 Tallowamide MEA

Foam stabilizer
 30 Babassuamidopropylamine oxide
 Behenamine oxide
 Caprylyl pyrrolidone
 Cetamine oxide
 Cocamide DEA, C. MEA, C. MIPA
 Cocamidopropyl betaine
 35 Cocamidopropyl hydroxysultaine
 Cocamidopropyl lauryl ether
 Cocamidopropylamine oxide
 Cocamine oxide
 Dihydroxyethyl C12-15 alkoxypropylamine oxide
 40 Dihydroxyethyl cocamine oxide
 Dihydroxyethyl tallowamine oxide
 Erucamidopropyl hydroxysultaine
 Hydroxypropyl methylcellulose
 Isostearamide DEA
 45 Lauramide DEA, L. MEA
 Lauramido propylamine oxide
 Lauramine oxide
 Laureth-10
 Lauric-linoleic DEA
 50 Lauroyl-linoleoyl diethanolamide
 Lauroyl-myristoyl diethanolamide
 Lauryl pyrrolidone
 Linoleamide MEA

Myristamide DEA, M. MEA
 Oleamide MEA
 Palmitamide MEA
 PEG-3 lauramide
 PEG-4 oleamide
 Ricinoleamide MEA
 Sesamide DEA
 Wheat germamide DEA

Foamer

Ammonium laureth sulfate
 Ammonium laureth-5 sulfate
 Ammonium laureth-12 sulfate
 Ammonium lauryl sulfate, A.I. sulfosuccinate
 Ammonium myreth sulfate
 Ammonium nonoxynol 4 sulfate
 Capryl caprylylglucoside
 Cetyl betaine
 Cocamide
 Cocamidopropyl dimethylamine
 Cocamidopropyl dimethylamine lactate
 DEA-laureth sulfate
 DEA lauryl sulfate
 Decyl glucoside
 Disodium caproamphodiacetate
 Disodium caproamphodipropionate
 Disodium capryloamphodiacetate
 Disodium cocoamphodipropionate
 Disodium lauroamphodiacetate
 Disodium lauroamphodipropionate
 Disodium lauryl sulfosuccinate
 Disodium oleamido MEA-sulfosuccinate
 Disodium oleamido MIPA-sulfosuccinate
 Disodium PEG-4 cocoamido MIPA-
 sulfosuccinate
 Isostearamidopropylamine oxide
 Lauryl glucoside
 Methyl gluceth-20
 MEA-laureth sulfate
 Mixed isopropanolamines myristate
 MIPA-lauryl sulfate
 PEG-80 sorbitan laurate
 PEG lauryl ether sulfate
 Potassium cocoate, P. lauryl sulfate
 Quillaja saponaria extract
 Sodium caproamphoacetate
 Sodium capryloamphoacetate
 Sodium capryloamphohydroxypropylsulfonate
 Sodium cocoamphoacetate
 Sodium cocoamphopropionate
 Sodium C12-15 pareth-25 sulfate
 Sodium C12-15 pareth-3 sulfonate
 Sodium C12-15 pareth-15 sulfonate

- Sodium C14-16 olefin sulfonate
 Sodium deceth sulfate
 Sodium laureth-2 sulfate
 Sodium laureth-3 sulfate
 5 Sodium laureth-7 sulfate
 Sodium lauriminodipropionate
 Sodium laurylether sulfosuccinate
 Sodium lauryl sulfate, S.I. sulfoacetate
 Sodium lauryl sulfosuccinate
 10 Sodium magnesium laureth sulfate
 Sodium myreth sulfate, S. myristyl sulfate
 Sodium trideceth sulfate
 Sodium tridecyl sulfate
 TEA-dodecylbenzenesulfonate
 15 TEA-laureth sulfate
 TEA-lauroyl collagen amino acids
 TEA-lauroyl keratin amino acids
 TEA-lauryl sulfate
 TEA-palm kernel sarcosinate
 20 Wheat germamidopropyl betain
 Yucca vera extract

Fragrance

- 25 Chamaecyparis obtusa oil
 Orange (Citrus aurantium dulcis) oil
 Peppermint (Mentha piperita) oil
 Phenethyl alcohol

Fragrance solvent

- 30 Benzyl benzoate
 Diethyl phthalate
 Triacetin
 Triethyl citrate

Fungicide

- 35 Astrocaryum murumuru extract
 Azadirachta indica extract
 Captan
 Diiodomethyltolylsulfone
 40 Ficus racemosa extract
 Hexetidine
 Ligusticum jeholense extract
 Mauritia flexosa extract
 Melaleuca symphyocarp extract
 45 Melia australasica extract
 Melia azadirachta extract
 Mushroom (Cordyceps sabolifera) extract
 Mushroom (Coriolus versicolor) extract
 Sodium undecylenate
 50 Tea tree (Melaleuca alternifolia) oil
 Thiabendazole
 Undecylenamide MEA
 Zinc undecylenate

Ziziphus jujuba extract

Gellant

Acrylic acid/acrylonitrogens copolymer
 Agar
 Algin
 Aluminum distearate, A. tristearate
 Ammonium acrylates/acrylonitrogens copolymer
 Behenic acid
 Calcium alginate
 Carbomer
 Carboxymethylchitosan
 N,O-Carboxymethylchitosonium
 Carrageenan (Chondrus crispus)
 Ceresin
 Cetearyl candelillate
 Dibenzylidene sorbitol
 Ethylene/acrylic acid copolymer
 Ethylene/VA copolymer
 Gellan gum
 Hexanediol behenyl beeswax
 Hydrogenated jojoba oil
 Hydrogenated jojoba wax
 Hydroxystearic acid
 Jojoba wax
 Laneth-5, -15
 Montmorillonite
 Myreth-3-octanoate
 Octacosanyl stearate
 Oleth-3 phosphate
 Oleth-10 phosphate
 Poloxamer 105, 123, 124, 185, 235
 Poloxamer 237, 238, 338, 407
 Polyethylene
 Polyethylene, oxidized
 Polyquaternium-31
 Potassium alginate, P. chloride
 Sodium nonoxynol-6 phosphate
 Sodium tallowate
 Synthetic beeswax
 TEA-acrylates/acrylonitrogens copolymer
 Tribehenin

Glosser

C18-36 acid glycol ester
 Diphenyl dimethicone
 Methyl gluceth-10
 Octyldodecyl lactate
 Phenyl methicone, P. trimethicone
 Polyglyceryl-2 dioleate
 Polyisobutene
 Polyisobutene/isohexapentacontahectane
 Polyisobutene/isooctahexacontane

	Polymethacrylamidopropyltrimonium chloride	Dihydroxyethyl tallowamine oleate
	PPG-10 methyl glucose ether	Dimethicone
	PPG-36 oleate	Dimethicone copolyol acetate, D.c. almondate
	Tea (Camellia sinensis) oil	Dimethicone copolyol amine
5	Tribehenin	Dimethicone copolyol bishydroxyethylamine
	<u>Hair care</u>	Dimethicon copolyol isostearate, D.c. laurate
	Gentiana scabra extract	Dimethicone copolyol olivate
	Maidenhair fern extract	Dimethicone hydroxypropyl trimonium chloride
10	Nicotinamide	Dimethyl lauramine dimer dilinoleate
	Nicotinic acid	Dioleylamidoethyl hydroxyethylmonium
	Paeonia lactiflorum extract	methosulfate
	Watercress (Nasturtium officinale) extract	Dipalmitoylethyl hydroxyethylmonium
		methosulfate
15	<u>Hair conditioner</u>	Diphenyl dimethicone
	Amino bispropyl dimethicone	Ditalowdimonium chloride
	Amodimethicone	N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate)
	AMPD-isostearoyl hydrolyzed collagen	ammonium chloride
	Aqua Ichthammol	Entada phaseoloides extract
20	Babassu (Orbignya oleifera) oil	Ethyl ester of hydrolyzed animal protein
	Babassuamidopropalkonium chloride	Gelatin
	Behenamidopropyl dimethylamine	Ginseng hydroxypropyltrimonium chloride
	Behenamidopropyl hydroxyethyl dimonium	butylene glycol
	chloride	Hematin
25	Behentrimonium chloride	Honey (Mel)
	Biotin	Hydrolyzed collagen
	Bishydroxyethyl biscetyl malonamide	Hydrolyzed hair keratin
	Borageamidopropyl phosphatidyl PG-dimonium	Hydrolyzed vegetable protein
	chloride	Hydrolyzed wheat protein/dimethicone copolyol
30	Brazil nut (Bertholettia excelsa) oil	acetyl copolymer
	Cetearyl trimonium methosulphate	Hydrolyzed wheat protein hydroxypropyl
	Cetrimonium bromide, C. chloride	polysiloxane
	Cetyl pyridinium chloride	Hydroxyethyl cetyldimonium phosphate
	Chia (Salvia hispanica) oil	Hydroxypropyl trimonium hydrolyzed collagen
35	Chrysanthemum morifolium extract	Hydroxypropyl trimonium hydrolyzed wheat
	Cinchona succirubra extract	protein polysiloxane copolymer
	Cocamidopropyl dimethylamine propionate	Hyssop (Hyssopus officinalis) extract
	Coccinea indica extract	Inga edulis extract
	Cocodimonium hydroxypropyl hydrolyzed	Isostearamidopropylamine oxide
40	collagen	Isostearoyl hydrolyzed collagen
	Cocodimonium hydroxypropyl hydrolyzed	Keratin amino acids
	keratin	Kiwi (Actinidia chinensis) fruit extract
	Cocodimonium hydroxypropyl silk amino acids	Kola (Cola acuminata) extract
	Cocodimonium hydroxypropyl hydrolyzed wheat	Laminaria japonica extract
45	protein	Laurtrimonium chloride
	Cocodimonium hydroxypropyloxyethyl cellulose	Lauryl hydroxypropyl trimonium polysiloxane
	Cocotrimonium chloride	copolymer
	Collagen amino acids	Lauryldimethylamine isostearate
	Cyclomethicone	Lauryldimonium hydroxypropyl hydrolyzed
50	L-cysteine HCL	collagen
	Dibehenylmonium methosulfate	Lauryldimonium hydroxypropyl hydrolyzed
	Dicetyldimonium chloride	wheat protein
	Dicocodimonium chloride	Linoleamidopropyl dimethylamine dimer
		dilinoleate

	Linoleamidopropyldimethylamine	Tallowbenzyltrimethylammonium chloride,
	Lysimachia foenum-graecum extract	hydrogenated
	Melaleuca hypericifolia extract	Tallowtrimonium chloride
	Ocimum sanctum extract	Tea (Camellia sinensis) oil
5	Olealkonium chloride	TEA-cocoyl hydrolyzed soy protein
	Oleyl dimethylamidopropyl ethonium ethosulfate	Thenoyl methionate
	Palmitamidodecanediol	Trimethylsilylamodimethicone
	Panthenyl ethyl ether	Wheat amino acids
	Paulownia imperialis extract	
10	Peach (Prunus perisca) leaf extract	
	PEG-2 cocomonium chloride	
	PEG-120 jojoba acid/alcohol	
	PG-hydroxycellulose lauryldimonium chloride	
15	PG-hydroxyethylcellulose cocodimonium chloride	
	PG-hydroxyethylcellulose lauryldimonium chloride	
	PG-hydroxyethylcellulose stearyldimonium chloride	
20	Phenyl trimethicone	
	Phospholipids	
	Phytantriol	
	Polyoxyethylene polyoxypropylene glycol	
	Polypropylene glycol	
25	Polyquaternium-4, -6, -7, -10	
	Polyquaternium-22, -28, -39	
	PPG-5-ceteth-10 phosphate	
	Propyltrimonium hydrolyzed collagen	
	propyltrimonium hydrolyzed soy protein	
30	Quaternium-18, -75, -81, -82	
	Quaternium-79 hydrolyzed keratin	
	Quaternium-79 hydrolyzed silk	
	Sambucus nigra extract, oil	
	Sesamidopropalkonium chloride	
35	Silicone quaternium-1, -8	
	Sodium cocoamphoacetate	
	Sodium cocoyl hydrolyzed collagen	
	Sodium polystyrene sulfonate	
	N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl	
40	ammonium ethyl sulfate	
	Steapyrium chloride	
	Stearalkonium chloride	
	Stearamidopropyl dimethylamine	
	Steardimonium hydroxypropyl hydrolyzed wheat	
45	protein	
	STeartrimonium chloride	
	Steartrimonium hydroxyethyl hydrolyzed collagen	
	N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl	
50	ammonium ethyl sulfate	
	Stenocalyx micalii extract	
	Sulfur	

Hair set resin polymer

- Acrylates/acrylamide copolymer
 Acrylates/PVP copolymer
 Acrylates/hydroxyesters acrylates copolymer
 5 Acrylates/octylarylamide copolymer
 AMP-acrylates copolymer
 Butylester of PVM-MA copolymer
 Carboxylated vinylacetate terpolymer
 Diglycol/CHDM/isophthalates/SIP copolymer
 10 Eclipta alba extract
 Ethyl ester of PVM/MA copolymer
 Hydroxypropyl chitosan
 Isopropyl ester of PVM/MA copolymer
 Octylacrylamide/acrylates/butylaminoethyl
 15 methacrylate copolymer
 Polymethacrylamidopropyltrimonium chloride
 Polypropylene glycol oligosuccinate
 PVP
 PVP/dimethylaminoethylmethacrylate copolymer
 20 PVP/Polycarbamyl polyglycol ester
 PVP/VA copolymer
 PVP/VA vinyl propionate copolymer
 Sodium polyacrylate
 VA/butyl maleate/isobornyl acrylate copolymer
 25 VA/crotonates/vinyl neodecanoate copolymer
 VA/crotonates/vinyl propionate copolymer
 VA/crotonates copolymer
 Vinyl caprolactam/PVP/
 30 dimethylaminoethylmethacrylate copolymer

Hair sheen

Maidenhair fern extract
 Tetrabutoxypropyl methicone

Hair waving

- Ammonium thioglycolate, A. thiolactate
 Argania spinosa oil
 L-cysteine HCL
 Cystine
 40 Diammonium dithiodiglycolate
 Dilauryl thiodipropionate
 Ethanolamine sulfite, E. thioglycolate
 Ethanolamine thiolactate
 Glyceryl thioglycolate
 45 Hydroxymethyl dioxazabicyclooctane
 Jojoba esters
 Monoethanolamine thiolactate
 Shea butter, ethoxylated
 Sodium thioglycolate
 50 Thioglycerin
 Thioglycolic acid
 Thiolactic acid

Humectant

Acetamide MEA
 Acetyl monoethanolamine
 6-(N-Acetylamino)-4-oxyhexyltrimonium
 chloride
 Adenosine phosphate
 Ammonium lactate
 Atelocollagen
 Calcium pantothenate
 Calcium stearoyl lactylate
 Carboxymethyl chitin
 Carboxymethyl chitosan succinamide
 Chitosan PCA
 Cholesteryl hydroxystearate
 Collagen amino-polysiloxane hydrolyzate
 Colloidal oatmeal
 Copper PCA methylsilanol
 Dimethicone copolyol laurate
 Dipotassium glycyrrhizinate
 Ethyl ester of hydrolyzed silk
 Fatty quaternary amine chloride complex
 Glucos glutamate
 Glycereth-4,5-lactate
 Glycereth-7, -12, -26
 Glycerin
 Honey extract
 Hydrogenated passion fruit oil
 Hydrolyzed casein
 Hydrolyzed fibronectin
 Hydrolyzed glycosaminoglycans
 Hydrolyzed oat protein
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydroxypropyl chitosan
 Hydroxypropyltrimonium hydrolyzed casein
 Hydroxypropyltrimonium hydrolyzed silk
 Hydroxypropyltrimonium hydrolyzed soy protein
 Hydroxypropyltrimonium hydrolyzed wheat
 protein
 Keratin amino acids
 Lactamide DGA, MEA
 Lactamidopropyl trimonium chloride
 Lactic acid
 Lactose
 Lauroyl lysine
 Maltitol
 Mannitol
 Methyl gluceth-10, -20
 Natto gum
 Oat (Avena sativa) extract, protein
 Panthenol
 Panthenyl ethyl ether
 PCA

PEG-4
 Polyamino sugar condensate
 Potassium lactate
 Propylene glycol
 5 Propyltrimonium hydrolyzed collagen
 propyltrimonium hydrolyzed soy protein
 Propyltrimonium hydrolyzed wheat protein
 Quaternium-22
 Rice (Oryza sativa) germ oil
 10 Sea Salts (Maris sal)
 Shea butter (Butyrospermum parkii)
 Silk powder
 Sodium behenoyl lactylate
 Sodium caproyl lactylate
 15 Sodium cocoyl lactylate
 Sodium hyaluronate
 Sodium isostearoyl lactylate
 Sodium lactate, S. lauroyl lactylate, S. PCA
 Sodium polyglutamate
 20 Sodium stearoyl lactylate
 Sorbitan laurate
 Sorbitan sesquiisostearate
 Sorbitol
 Sphingolipids
 25 TEA-PCA
 Urea

Hydrotrope

Ammonium cumenesulfonate
 30 Ammonium xylenesulfonate
 Cetamine oxide
 Cocamidopropylamine oxide
 Lauramine oxide
 Potassium toluenesulfonate
 35 PPG-2-isodeceth-4, -6, -9, -12
 Sodium cumene sulfonate
 Sodium laureth-13-carboxylate
 Sodium toluene sulfonate
 Sodium xylene sulfonate
 40 Trideceth-19-carboxylic acid

Intermediate

Caprylic acid
 Deceth-3
 45 Diethyl succinate
 Dimethylaminopropylamine
 DM hydantoin
 Dodecylbenzene sulfonic acid
 Ethylene dichloride
 50 4-Fluoro 3-nitro aniline
 Lauramine
 Methyl benzoate, M. cocoate
 Methyl isostearate, M. laurate

Methyl myristate, M. palmitate
 Oleic acid
 Ricinoleic acid
 Tall oil acid
 Tallow acid

Lathering agent

Ammonium cocoyl sarcosinate
 Ammonium C12-15 alkyl sulfate
 Ammonium lauroyl sarcosinate
 Cocamide MEA ethoxylate
 Cocamidopropyl dimethylaminohydroxypropyl
 hydrolyzed collagen
 Lauroyl sarcosine
 Myristoyl sarcosine
 Sodium cocoyl sarcosinate
 Sodium lauroyl sarcosinate
 Sodium methyl cocoyl taurate
 Sodium myristoyl sarcosinate
 TEA-cocoyl sarcosinate
 TEA-lauroyl sarcosinate

Lubricant

Aluminum salt octenyl succinate
 Amodimethicone
 Boron nitride
 Calcium aluminum borosilicate
 Calcium stearate
 Caprylic/capric triglyceride
 Coceth-7 carboxylic acid
 Coconut (Cocos nucifera) oil
 Cyclomethicone
 Diisodecyl adipate
 Diisostearyl fumarate
 Dimethicone copolyol
 Glyceryl isostearate, G. oleate
 Glyceryl polymethacrylate
 Gold of Pleasure oil
 Hyaluronic acid
 Hydrogenated coconut oil
 Hydrogenated cottonseed oil
 Hydrogenated palm oil
 Hydrogenated soybean/cottonseed oil
 Hydrogenated soybean oil
 Hydrogenated vegetable oil
 Hydrolyzed oat flour
 Hydroxypropyl guar
 Isodecyl stearate
 Isopropyl lanolate
 Isostearyl diglyceryl succinate
 Jojoba esters
 Lanolin oil
 Laureth-3 phosphate
 Magnesium myristate, M. stearate

Mango (*Mangifera indica*) oil
 Mineral oil (*Paraffinum liquidum*)
 Mink oil
 Monostearyl citrate
 5 Neatsfoot oil
 Oleostearine
 Partially hydrogenated soybean oil
 PEG-2 stearate
 PEG-4 dilaurate
 10 PEG-5M
 PEG-9M
 PEG-23M
 PEG-27 lanolin
 PEG-30 lanolin
 15 PEG-40 lanolin, P. stearate
 PEG-45M
 PEG-90M
 PEG-160M
 PEG/PPG-17/6 copolymer
 20 Pentaerythrityl tetrapelargonate
 Petrolatum
 Phenethyl dimethicone
 Phenyl methicone
 Polyacrylamidomethylpropane sulfonic acid
 25 Polybutane
 Polydimethicone copolyol
 Polyglycerol ester of mixed vegetable fatty acids
 Polymethylsilsesquioxane
 Potassium laurate, P. myristate
 30 Potassium tallowate
 PPG-2 myristyl ether propionate
 PPG-3 myristyl ether
 PPG-9-buteth-12
 PPG-11 stearyl ether
 35 PPG-12-buteth-16
 PPG-12-PEG-50 lanolin
 PPG-14 butyl ether
 PPG-20 cetyl ether
 PPG-20-buteth-30
 40 PPG-24-buteth-27
 PPG-28-buteth-35
 PPG-36 oleate
 PPG-40 butyl ether
 Quaternium-79 hydrolyzed keratin
 45 Quaternium-79 hydrolyzed silk
 Rice (*Oryza sativa*) starch
 Shea butter (*Butyrospermum parkii*) extract
 Shorea stenoptera butter
 Silica
 50 Stearamide MEA, S. MEA-stearate
 Stearoxytrimethylsilane
 Stearyl dimethicone
 Triisostearyl citrate

Triolein
 Trisodium HEDTA
 Triundecanoin
 Zinc laurate, Z. stearate

Miscellaneous

Adhesion promoter — Glycerin/diethylene glycol/adipate crosspolymer
Analgesic — Glycol salicylate
Anesthetic — Benzocaine
Anti-elastic — Hydrolyzed *Ulva lactuca* extract
Anti-itching — Sodium shale oil sulfonate
Antiacid — Magnesium hydroxide, Magnesium silicate, Simethicone
Antifoam — Dimethicone silylate, Simethicone
Antilipasic — *Laminaria saccharina* extract
Antipruritic — Coal tar
Antispasmodic — Garlic (*Allium sativum*) extract
Antiwrinkle — Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
Barrier — Glycerin/diethylene glycol/adipate crosspolymer
Cell regeneration — Glycoproteins, Hydrolyzed *Ulva lactuca* extract
Co-emulsifier —
 Cholesteryl/behenyl/octyldodecyl lauroyl glutamate, Isododecane
Colloid — Gelatin
Cooling agent — Menthyl PCA, Menthone glycerin acetal
Detoxifier — Clover (*Trifolium pratense*) extract
Dye stabilizer — Uric acid
Filler — Mica
Fragrance stabilizer — 2,2',4,4'-Tetrahydroxybenzophenone
Free radical scavenger — Melanin
IR filter — *Corallina officinalis*
Lanolin substitute — PEG-80 jojoba acid/alcohol
Lipolytic — *Gelidium cartilagineum*
Oxidant — Barium peroxide, Hydrogen peroxide, Urea peroxide
Oxygen carrier — Perfluorodecalin
Peroxide stabilizer — Phenacetin, Sodium stannate
Scalp stimulant — Birch (*Betula alba*) leaf extract
Sebostatic — *Laminaria saccharina* extract
Shine enhancer — Hydrolyzed wheat protein hydroxypropyl polysiloxane
Skin barrier lipid — Ceramide 3, N(27-Stearoyloxy-heptacosanoyl) phytosphingosine
Skin clarifier — Oat (*Avena sativa*) bran extract
Skin purifier — Birch (*Betula alba*) leaf extract

- Substantivity* — Dimethicone copolyol
bishydroxyethylamine, Dimethicone
hydroxypropyl trimonium chloride,
Trimethylsilylamodimethicone
- 5 *Sunless tanning* — Acetyl tyrosine, Eclipta alba
extract in white emulsion
Tonic — Kiwi (Actinidia chinensis) fruit extract,
Matricaria (Chamomilla recutita) extract,
Orange (Citrus aurantium dulcis) peel extract
- 10 *Viscosity stabilizer* — Diisodecyl adipate
Spreading agent — Stearyl heptanoate
Wound healing — Comfrey (Symphytum
officinale) leaf extract
Waterproofing agent — PVP/eicosene copolymer,
15 PVP/hexadecene copolymer, Tricontanyl
PVP
- Moisture barrier**
Acrylates/octylarylamide copolymer
- 20 Betaglucon
C16-18 alkyl methicone
Cholesterol
Glycolipids
Isoeicosane
- 25 Isohexadecane
Lanosterol
Octyl pelargonate, O. stearate
Polyisobutene
Polyisobutene/isohexapentacontahectane
- 30 Polyisobutene/isooctahexacontane
Silica silylate
Trihydroxypalmitamidohydroxy propyl myristyl
ether
Trimethylsiloxysilicate
- 35 **Moisturizer**
Acetamidopropyl trimonium chloride
Adenosine triphosphate
Aesculus chinensis extract
- 40 Algae (Ascophyllum nodosum) extract
Algae extract
Aloe barbadensis, A.b. extract
Ammonium lactate
Amniotic fluid
- 45 Apple (Pyrus malus) extract
Apricot (Prunus armeniaca) kernel oil
Arginine PCA
Atelocollagen
Artemisia apiacea extract
- 50 Astrocryum murumuru extract
Avocado (Persea gratissima) extract, oil
Avocado (Persea gratissima) unsaponifiables
Babassu (Orbignya oleifera) oil
- Bactri gasipaes extract
Benincasa hispids extract
Betaglucon
Betaine
Borage (Borago officinalis) seed oil
Brazil nut (Bertholettia excelsa) extract, oil
C10-30 cholesterol/lanosterol esters
Calcium pantothenate
Calcium protein complex
Caprylic/capric triglyceride
Caprylic/capric/lauric triglyceride
Caprylic/capric/linoleic triglyceride
Caprylic/capric/oleic triglycerides
Cashew (Anacardium occidentale) nut oil
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chia (Salvia hispanica) oil
Chinese hibiscus (Hibiscus rosa-sinensis) extract
Chitin
Chitosan, C. PCA
Cholesteric esters
Cholesterol
Cholesteryl/behanyl/octyldodecyl lauroyl
glutamate
Cocodimonium hydroxypropyl hydrolyzed
collagen
Cocodimonium hydroxypropyl hydrolyzed silk
Cocodimonium hydroxypropyl hydrolyzed wheat
protein
Cocodimonium hydroxypropyl silk amino acids
Collagen
Collagen amino acids, C. phthalate
Copper aspartate, C. protein complex
Corn (Zea mays) oil
Cottonseed (Gossypium) oil
Crataegus cuneata extract
Cucumber (Cucumis sativus) extract
Desamido collagen
Dicaprylyl maleate
Diisocetyl dodecanedioate
Diisostearyl adipate
Dimethyl hyaluronate
Dimethylsilanol hyaluronate
Diocetyldodecyl dimer diinoleate
Diocetyldodecyl dodecanedioate
Dipentaerythritol fatty acid ester
Dog rose (Rosa canina) hips extract
Dog rose (Rosa canina) seed extract
Echitea glauca extract
Elastin amino acids
Emblica officinalis extract
Ethyl minkate
Eugenia jambolana extract

	Evening primrose (<i>Oenothera biennis</i>) extract, oil	Lactamide DGA, L. MEA
	Galla sinensis extract	Lactic acid
	Ganoderma lucidum oil	Lactobacillus/whey ferment
	Ginseng (<i>Panax ginseng</i>) extract	Lactococcus hydrolysate
5	Gleditsia sinensis extract	Lactoyl methylsilanol elastinate
	Glycereth-12	Lanolin alcohol
	Glyceryl alginate, G. collagenate	Lauryl PCA
	Glyceryl polymethacrylate	Lecithin
	Glycolic acid	Lesquerella fendleri oil
10	Glycolipids	Liposomes
	Glycosaminoglycans	Lysine PCA
	Glycosphingolipids	Macadamia ternifolia nut oil
	Gnetum amazonicum extract	Magnesium aspartate
	Grape (<i>Vitis vinifera</i>) seed oil	Maltitol
15	Hazel (<i>Corylus avellana</i>) nut oil	Manganese aspartate
	Honey extract	Mango (<i>Mangifera indica</i>) oil
	Hyaluronic acid	Mannan
	Hybrid safflower (<i>Carthamus tinctorius</i>) oil	Marine polyaminosaccharide
	Hydrogenated castor oil	Mauritella armata extract
20	Hydrogenated coconut oil	Maximilliana regia extract
	Hydrogenated cottonseed oil	Meadowfoam (<i>Limnanthes alba</i>) seed oil
	Hydrogenated lecithin	Melaleuca hypericifolia extract
	Hydrogenated palm oil	Methylsilanol elastinate, M. mannuronate
	Hydrogenated polyisobutene	Milk amino acids
25	Hydrogenated soybean oil	Mineral oil (Paraffinum liquidum)
	Hydrogenated soybean/cottonseed oil	Molybdenum aspartate
	Hydrogenated vegetable oil	Mouriri apiranga extract
	Hydrolyzed carbolipoprotein	Natto gum
	Hydrolyzed collagen	Nelumbium speciosum extract
30	Hydrolyzed elastin	Neopentyl glycol dicaprate
	Hydrolyzed fibronectin	Oat (<i>Avena sativa</i>) protein
	Hydrolyzed glycosaminoglycans	Octyl hydroxystearate
	hydrolyzed keratin	Ophiopogon japonicus extract
	Hydrolyzed milk protein	Orange (<i>Citrus aurantium dulcis</i>) peel wax
35	Hydrolyzed oats	Palmetto extract
	Hydrolyzed pea protein	Pantethine
	Hydrolyzed placental protein	Panthenyl ethyl ether
	Hydrolyzed rice protein	Paraffin
	Hydrolyzed transgenic collagen	Partially hydrogenated soybean oil
40	Hydrolyzed serum protein	peanut (<i>Arachis hypogaea</i>) oil
	Hydrolyzed silk	Pecan (<i>Carya illinoensis</i>) oil
	Hydrolyzed sweet almond protein	PEG-4, -6, -8, -12
	Hydrolyzed wheat protein	PEG-70 mango glycerides
	Hydroxyethyl chitosan	PEG-75 shea butter glycerides
45	Inositol	PEG-75 shorea butter glycerides
	Isodecyl salicylate	PEG-100 stearate
	Isostearyl hydrolyzed animal protein	Pentaerythrityl
	Jojoba (<i>Buxus chinensis</i>) oil	isostearate/caprate/caprylate/adipate
	Jojoba esters	Pentaerythrityl stearate/caprate/caprylate/adipate
50	Keratin amino acids	Pentylene glycol
	Kiwi (<i>Actinidia chinensis</i>) fruit extract	Perfluoropolymethylisopropyl ether
	Kola (<i>Cola acuminata</i>) extract	Petrolatum
	Kukui (<i>Aleurites molaccana</i>) nut oil	Petroleum wax

Pfaffia spp. extract
 Pistachio (*Pistacia vera*) nut oil
 Placental protein
 Plankton extract
 5 Polyamino sugar condensate
 Polybutene
 Polyunsaturated fatty acids
 Potassium DNA, P. lactate, P. PCA
 PPG-8/SMDI copolymer
 10 PPG-20 methyl glucose ether distearate
 Propylene glycol dicaprylate/dicaprate
 Propylene glycol dioctanoate
 Pumpkin (*Cucurbita pepo*) seed oil
 Quinoa (*Chenopodium quinoa*) extract
 15 Rapeseed (*Brassica campestris*) oil
 Rehmannia chinensis extract
 Rice (*Oryza sativa*) bran oil
 Rose Water
 Royal jelly extract
 20 Saccharide isomerate
 Saccharomyces lysate extract
 Saccharomyces/soy protein ferment
 Safflower (*Carthamus tinctorius*) oil
 Selenium aspartate, S. protein complex
 25 Sericin
 Serum albumin
 Sesame (*Sesamum indicum*) oil
 Shea butter (*Butyrospermum parkii*)
 Shea butter (*Butyrospermum parkii*) extract
 30 Shorea stenoptera butter
 Silk amino acids
 Sodium carboxymethyl beta-glucan
 Sodium chondroitin sulfate
 Sodium DNA, S. hyaluronate
 35 Sodium lactate, S. PCA
 Soube collagen
 Soube transgenic elastin
 Soybean (*Glycine soja*) oil
 Spherical cellulose acetate
 40 Spondias amara extract
 Squalene
 Stomach extract
 Sunflower (*Helianthus annuus*) seed oil
 Superoxide dismutase
 45 Tissue extract
 Tocopheryl acetate, T. linoleate
 Tomato (*Solanum lycopersicum*) extract
 Tormentil (*Potentilla erecta*) extract
 Trehalose
 50 Triundecanoin
 Vegetable oil
 Walnut (*Juglans regia*) oil
 Watercress (*Nasturtium officinale*) extract

Wheat (*Triticum vulgare*) germ extract, germ oil
 Yarrow (*Achillea millefolium*) extract
 Wheat amino acids
 Yeast (*Saccharomyces cerevisiae*) extract (Faex)
 Yogurt filtrate
 Zinc aspartate
 Ziziphus jujuba extract

Naturilizer

2-Aminobutanol
 Aminoethyl propanediol
 Aminomethyl propanediol
 Aminomethyl propanol
 Ammonium carbonate
 Calcium hydroxide
 Diethanolamine
 Ethanolamine
 Glucamine
 Isopropanolamine
 Isopropylamine
 2-Methyl-4-hydroxypyrrolidine
 Morpholine
 Sodium bromate
 Succinic acid
 Tetrahydroxypropyl ethylenediamine
 Triethanolamine
 Tromethamine

Oil absorbent

Hydrated silica
 Polymethyl methacrylate
 Silicon dioxide hydrate
 Walnut (*Juglans regia*) shell powder

Ointment base

Borage (*Borago officinalis*) seed oil
 Caprylic/capric/stearic triglyceride
 Glyceryl cocoate
 Hydrogenated coco-glycerides
 Lanolin
 Mink oil
 Oleostearine
 Tallow

Opacifier

Barium sulfate
 C12-16 alcohols
 Cetearyl octanoate
 Cetyl myristate, C. palmitate
 Cocamidopropyl lauryl ether
 Glyceryl distearate
 Glyceryl hydroxystearate
 Glyceryl myristate, G. stearate

- Glycol distearate, G. stearate
 Magnesium myristate
 PEG-2 distearate, P. stearate
 PEG-2 stearate SE
 5 PEG-3 distearate
 Propylene glycol myristate, P.g. stearate
 Stearamide
 Stearamide DIBA-stearate
 Stearamide MEA
 10 Stearamide MEA-stearate
 Stearamidopropyl dimethylamine lactate
 Stearyl stearate
 Styrene homopolymer
 Styrene/acrylates copolymer
 15 Styrene/PVP copolymer
 Triisostearin PEG-6 esters

Plasticizer

- 20 Acetyl tributyl citrate
 Acetyl triethyl citrate
 AMP-isostearoyl hydrolyzed wheat protein
 AMPD-isostearoyl hydrolyzed collagen
 Cyclohexane dimethanol dibenzoate
 Dibutyl phthalate
 25 Diethyl phthalate
 Diethylene glycol dibenzoate
 Diisopropyl sebacate
 Dimethicone copolyol
 Dimethyl phthalate
 30 Dipropylene glycol dibenzoate
 Ethyl ester of hydrolyzed keratin
 Glycerol tribenzoate
 Glycol
 Hydrolyzed serum protein
 35 Isocetyl salicylate
 Isodecyl benzoate
 Isoeicosane
 Isopropyl lanolate
 Isostearoyl hydrolyzed collagen
 40 Lauroyl hydrolyzed collagen
 Marine collagen
 Monostearyl citrate
 Neopentyl glycol dibenzoate
 Octyl benzoate, O. laurate
 45 PEG-60 shea butter glycerides
 Pentaerythrityl tetrabenzoate
 Polyoxyethylene glycol dibenzoate
 Polypropylene glycol dibenzoate
 PPG-12-PEG-50 lanolin
 50 PPG-20 cetyl ether
 PPG-20 lanolin alcohol ether
 Propylene glycol dibenzoate
 Propylene glycol myristyl ether acetate

Rice (Oryza sativa) bran wax
 Serum protein
 Tosylamide/epoxy resin
 Triacetin
 Tributyl citrate
 Triethyl citrate
 Trimethyl pentanediol dibenzoate
 Trimethylethanetribenzoate

Polish

Acrylates copolymer
 Aluminum silicate
 Neatsfoot oil
 Tallow

Polymer

Acrylamide sodium acrylate copolymer
 Acrylates-VA crosspolymer
 Acrylates/acrylamide copolymer
 Acrylates/hydroxyesters acrylates copolymer
 Acrylates/octylacrylamide copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Adipic acid-epoxypropyl diethylenetriamine
 copolymer
 Adipic acid/dimethylaminohydroxypropyl
 diethylene triamine copolymer
 Ammonium acrylates copolymer
 Ammonium acrylates/acrylonitrogens copolymer
 AMP-acrylates copolymer
 AMP-isostearoyl hydrolyzed collagen
 Butylester of PVM-MA copolymer
 Calcium carrageenan
 Carboxylated vinylacetate terpolymer
 Cetareth-2 phosphate
 Cetareth-5 phosphate
 Cetareth-10 phosphate
 Cetareth-29, -34
 Coco-glucoside
 Cocodimonium hydroxypropyloxyethyl cellulose
 C12-13 pareth-4, -9, -23
 DEA-cetareth-2-phosphate
 DEA-oleth-5-phosphate
 DEA-oleth-20-phosphate
 Diglycol/CHDM/isophthalates/SIP copolymer
 Diisopropyl dimer dilinoleate
 Diisostearoyl trimethylolpropane siloxy silicate
 Diisostearyl dimer dilinoleate
 Dilinoleic acid
 Dodecanedioic acid/cetearyl alcohol/glycol
 copolymer
 Eclipta alba extract
 Ethyl ester of PVM/MA copolymer
 Ethylene/acrylic acid copolymer

- Ethylene/VA copolymer
 Glycereth-26 phosphate
 Hyaluronic acid
 Hydrolyzed RNA
 5 Hydrolyzed wheat protein polysiloxane polymer
 Hydroxypropyltrimonium hydrolyzed collagen
 Hydroxypropyltrimonium hydrolyzed wheat protein
 Laneth-40
 10 Lauryldimonium hydroxypropyl hydrolyzed soy protein
 Methacrylol ethyl betaine/acrylates copolymer
 Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
 15 Oleth-2 phosphate
 Oleth-5 phosphate
 PEG-3 lanolate
 PEG-4 stearate
 PEG-5M
 20 PEG-7 glyceryl cocoate
 PEG-8 glyceryl laurate
 PEG-8/SMDI copolymer
 PEG-9 castor oil
 PEG-9M
 25 PEG-11 babassu glycerides
 PEG-12 palm kernel glycerides
 PEG-12 stearate
 PEG-14 avocado glycerides
 PEG-15 glyceryl laurate
 30 PEG-20 corn glycerides
 PEG-20 evening primrose glycerides
 PEG-20 glyceryl oleate
 PEG-23 oleate
 PEG-23M
 35 PEG-29 castor oil
 PEG-42 babassu glycerides
 PEG-45 safflower glycerides
 PEG-45M
 PEG-60 evening primrose glycerides
 40 PEG-60 hydrogenated castor oil
 PEG-75 castor oil
 PEG-90M
 PEG-120 distearate
 PEG-150 lanolin
 45 PEG-160M
 PG-hydroxycellulose lauryldimonium chloride
 PG-hydroxyethylcellulose cocodimonium chloride
 PG-hydroxyethylcellulose stearyldimonium chloride
 50 Polyethylene, ionomer
 Polyethylene, micronized
 Polyethylene, oxidized
 Polyglyceryl-2 polyhydroxystearate
 Polymethacrylamidopropyltrimonium chloride
 Polyquaternium-6, -7, -10, -11, -22, -39
 Polysilicone-8
 Potassium alginate
 Potassium lauroyl collagen amino acids
 Potassium lauroyl hydrolyzed soy protein
 Potassium lauroyl wheat amino acids
 PPG-8/SMDI copolymer
 PPG-12/SMDI copolymer
 PPG-51/SMDI copolymer
 PVM/MA decadiene crosspolymer
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/VA copolymer
 Sodium cocoyl hydrolyzed wheat protein
 Steardimonium hydroxypropyl hydrolyzed wheat protein
 Steareth-2 phosphate
 TEA-acrylates/acrylonitrogens copolymer
 Tosylamide/epoxy resin
 Tosylamide/formaldehyde resin
 Trideceth-5, -6, -7, -8
 VA/butyl maleate/isobornyl acrylate copolymer
 VA/crotonates/vinyl neodecanoate copolymer
 Vinyl caprolactam/PVP/
 dimethylaminoethylmethacrylate copolymer
 Wheat (*Triticum vulgare*) protein
 Xanthan gum
Powder
 Acrylates copolymer, spherical powder
 Attapulgit
 Boron nitride
 Calcium aluminum borosilicate
 Calcium carbonate
 Cellulose triacetate
 Corn (*Zea mays*) cob powder, starch
 Hydrogenated jojoba wax
 Magnesium carbonate, M. myristate
 Magnesium stearate
 Mica
 Microcrystalline cellulose
 Nylon-6
 Nylon powder
 Oat (*Avena sativa*) starch
 Polyamide 12
 Polyethylene
 Polymethyl methacrylate
 Polymethylsilsesquioxane
 PTFE
 Silica
 Silk powder
 Spherical cellulose acetate

	Talc	Methyl paraben sodium
	Tapioca dextrin	Methylchloroisothiazolinone
	Zinc laurate	Methyldibromo glutaronitrile
5	<u>Powder, absorbent</u>	Methylisothiazolinone
	Aluminum starch octenylsuccinate	Methylparaben
	Clays (white, yellow, red, green, pink)	Mushroom (Cordyceps sabolifera) extract
	Sorbitol	Myrtrimonium bromide
	Tapioca	Pentasodium pentetate
10	<u>Preservative</u>	Pentetic acid
	Alcohol	Phenethyl alcohol
	Ascorbic acid	Phenol
	Ascorbyl palmitate	Phenyl mercuric acetate
15	Benzalkonium chloride	o-Phenylphenol
	Benzethonium chloride	Polyaminopropyl biguanide
	Benzoic acid	Polymethoxy bicyclic oxazolidine
	Benzyl alcohol	Potassium sorbate
	Benzylparaben	Propylparaben
20	5-Bromo-5 nitro-1,3-dioxane	Quaternium-15
	2-Bromo-2-nitropropane-1,2-diol	Salicylic acid
	Butylparaben	Sodium benzoate, S. bisulfate
	Calcium propionate	Sodium butylparaben, S. dehydroacetate
	Cetrimonium bromide	Sodium erythorbate, S. ethyl paraben
25	Cetyl pyridinium chloride	Sodium hydroxymethylglycinate
	Chloroxyleneol	Sodium metabisulfite, S. methylparaben
	Chlorphenesin	Sodium o-phenylphenate
	o-Cymen-5-ol	Sodium propionate, S. propylparaben
	Diazolindinyl urea	Sodium pyrithione, S. salicylate
30	Dichlorobenzyl alcohol	Sodium sulfite
	Dichlorophene	Sorbic acid
	Diiodomethyltolylsulfone	Tetrasodium EDTA
	Dimethyl hydroxymethyl pyrazole	Thimerosal
	Dimethyl oxazolidine	Thymol
35	Disodium EDTA	Tris (hydroxymethyl) nitromethane
	DMDM hydantoin	Trisodium EDTA, T. HEDTA
	EDTA	Usnic acid
	Erythorbic acid	Zinc PCA
	7-Ethylbicyclooxazolidine	<u>Propellant</u>
40	Ethylparaben	Butane
	Fomistopsis officinalis oil	Dimethyl ether
	Formaldehyde	Hydrofluorocarbon 152a
	Glutaral	Isobutane
	Glyceryl laurate	Propane
45	HEDTA	<u>Protein</u>
	Hexamidine diisethionate	Albumen
	Hexetidine	Atelocollagen
	Imidazolidinyl urea	Bletia hyacinthina extract
	Isobutylparaben	Chrysanthemum morifolium extract
50	Isopropyl sorbate	Cocodimonium hydroxypropyl hydrolyzed collagen
	Isopropylparaben	Cocodimonium hydroxypropyl hydrolyzed keratin
	MDM hydantoin	
	Methenammonium chloride	

	Cocodimonium hydroxypropyl hydrolyzed soy protein	Sodium stearoyl hydrolyzed collagen
	Cocodimonium hydroxypropyl hydrolyzed wheat protein	Sodium undecylenoyl hydrolyzed collagen
5	Cocoyl hydrolyzed collagen	Sodium/TEA-lauroyl hydrolyzed collagen
	Collagen, C. phthalate	Sodium/TEA-lauroyl hydrolyzed keratin
	Collagen amino-polysiloxane hydrolyzate	Soluble collagen
	Deoxyribonucleic acid	Soluble keratin
	Desamido collagen	Soluble wheat protein
10	Elastin amino acids	Soy (Glycine soja) protein
	Embryo extract	Steardimonium hydroxypropyl hydrolyzed collagen
	Ethyl ester of hydrolyzed animal protein	Steartrimonium hydroxyethyl hydrolyzed collagen
	Fibronectin	TEA-cocoyl hydrolyzed collagen
	Gelatin	TEA-cocoyl hydrolyzed soy protein
15	Human placental protein	TEA-lauroyl collagen amino acids
	Hydrolyzed collagen	TEA-lauroyl keratin amino acids
	Hydrolyzed extensin	Trachea hydrolysate
	Hydrolyzed fish protein	Triethonium hydrolyzed collagen ethosulfate
	Hydrolyzed hemoglobin	Wheat (Triticum vulgare) germ extract, protein
20	Hydrolyzed keratin	Wheat amino acids
	Hydrolyzed lactalbumin	Wheat peptide
	Hydrolyzed milk protein	Wheat protein
	Hydrolyzed soy flour	
	Hydrolyzed sweet almond protein	<u>Protein, hydrolyzed</u>
25	Hydroxypropyltrimonium hydrolyzed collagen	Ethyl ester of hydrolyzed silk
	Isostearoyl hydrolyzed collagen	Hydrolyzed casein
	Keratin	Hydrolyzed elastin
	Lactoferrin	Hydrolyzed mushroom (Tricholoma matsutake) extract
	Lactoglobulin	Hydrolyzed pea protein
30	Lauryldimonium hydroxypropyl hydrolyzed collagen	hydrolyzed rice protein
	Marine collagen	Hydrolyzed serum protein
	Methylsilanol elastinate	Hydrolyzed silk
	Potassium abietoyl hydrolyzed collagen	Hydrolyzed soy protein
35	Potassium cocoyl hydrolyzed collagen	Hydrolyzed vegetable protein
	Potassium myristoyl hydrolyzed collagen	Hydrolyzed wheat protein
	Potassium oleoyl hydrolyzed collagen	Hydroxypropyltrimonium hydrolyzed casein
	Potassium undecylenoyl hydrolyzed collagen	Hydroxypropyltrimonium hydrolyzed silk
	Propyltrimonium hydrolyzed collagen	Hydroxypropyltrimonium hydrolyzed soy protein
40	Propyltrimonium hydrolyzed soy protein	Hydroxypropyltrimonium hydrolyzed wheat protein
	Propyltrimonium hydrolyzed wheat protein	
	Protein hydrolysates	<u>Reducing agent</u>
	Quaternium-79 hydrolyzed keratin	Dimyristyl thiodipropionate
	Quaternium-79 hydrolyzed silk	Hydrolyzed zein, iodized
45	Rice peptide	Hydrolyzed zein, sulfurized
	RNA	Zinc formaldehyde sulfoxylate
	Serum albumin, S. protein	
	Silk powder	<u>Refatting agent</u>
	Sodium caseinate	Caprylic/capric triglyceride PEG-4 esters
50	Sodium cocoyl hydrolyzed collagen	Cocamide MIPA
	Sodium cocoyl hydrolyzed soy protein	Diisostearyl dimer dilinoleate
	Sodium myristoyl hydrolyzed collagen	Hydrogenated palm kernel glycerides
	Sodium oleoyl hydrolyzed collagen	

	Isostearyl erucate, I. isostearate	Dimethicone copolyolamine
	Lecithin	Dimethiconol fluoroalcohol dilinoleic acid
	Liposomes	Dimethiconol hydroxystearate, D. stearate
	Magnesium sulfate hepta-hydrate	Diphenyl dimethicone
5	Octyldodecyl behenate, O. myristate	Disodium-PG-propyldimethicone thiosulfate
	bis-Octyldodecyl stearoyl dimer dilinoleate	Isopropyl hydroxybutyramide dimethicone
	Octyldodecyl stearoyl stearate	copolyol
	Octyl hydroxystearate	Methicone
	PEG-3 stearate	Octamethyl cyclotetrasiloxane
10	PEG-4 oleamide	Phenyl methicone, P. trimethicone
	PEG-6 capric/caprylic glycerides	Polyether Trisiloxane
	PEG-7 glyceryl cocoate	Polymethylsilsesquioxane
	PEG-16	Polysilicone-8
	Propylene glycol dipelargonate	Quaternium-80
15		Silicone quaternium-1, -8
	<u>Resin</u>	Sodium-PG-propyl thiosulfate dimethicone
	Acrylates/hydroxyesters acrylates copolymer	Stearoxymethicone/dimethicone copolymer
	Ethylene vinyl acetate	Trimethylsilylamodimethicone
	Glyceryl abietate	
20	Methacrylol ethyl betaine/acrylates copolymer	<u>Skin calming agent</u>
	4-Methyl benzenesulfonamide	Cornflower (Centaurea cyanus) extract
	Polypropylene	Fennel (Foeniculum vulgare) extract
	Polyquaternium-16, -44	Fenugreek extract
	Sucrose benzoate	Linden (Tilia cordata) extract
25		Valerian (Valeriana officinalis) extract
	<u>Sequestrant</u>	
	Calcium acetate, C. phosphate, C. sulfate	<u>Skin cleanser</u>
	Encapsulation and entrapment systems	Dog rose (Rosa canina) hips extract
	Pentasodium triphosphate	Papaya (Carica papaya) extract
30	Phosphoric acid	Peach (Prunus persica) extract
	Potassium phosphate, P. sodium tartrate	Rose (Rosa multiflora) extract
	Silicon dioxide hydrate	Willow (Salix alba) extract
	Sodium citrate, S. gluconate	
	Sorbitol	<u>Skin conditioner</u>
35	Tartaric acid	Artemisia apiacea extract
	Tripotassium EDTA	Astrocaryum tucuma extract
	Trisodium NTA	Bactris gasipaes extract
		Biotin
	<u>Silicone</u>	Bishydroxyethyl biscetyl malonamide
40	Amino bispropyl dimethicone	Bletia hyacinthina extract
	Ammonium dimethicone copolyol sulfate	Borage (Borago officinalis) seed oil
	Amodimethicone	Borageamidopropyl phosphatidyl PG-dimonium
	Behenoxy dimethicone	chloride
	C16-18 alkyl methicone	Carbocysteine
45	Cetyl dimethicone copolyol	Catalpa kaempfera extract
	Cyclomethicone	Coco phosphatidyl PG-dimonium chloride
	Diisodecyl adipate	Cocodimonium hydroxypropyl hydrolyzed
	Diisostearyl trimethylolpropane siloxy silicate	keratin
	Dimethicone	Collagen amino acids
50	Dimethicone copolyol	Cyclomethicone
	Dimethicone copolyol almondate	Dimethicone, D. copolyol acetate
	Dimethicone copolyol isostearate	Emblica officinalis extract
	Dimethicone copolyol olivate, D.c. phthalate	Equisetum arvense extract

Ethyl ester of hydrolyzed animal protein
 Evening primrose (*Oenothera biennis*) oil
 Fomes fomentarius extract
 Fomistopsis officinalis oil
 5 Gelatin
 Ginseng hydroxypropyltrimonium chloride
 butylene glycol
 Glycolipids
 Glycosphingolipids
 10 Gnetum amazonicum extract
 Honey (Mel)
 Hydrolyzed carbolipoprotein
 Hydrolyzed elastin
 Hydrolyzed pea protein
 15 Hydrolyzed rice protein
 Hydrolyzed serum protein
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydrolyzed vegetable protein
 20 Hydrolyzed wheat protein
 Inga edulis extract
 Kiwi (*Actinidia chinensis*) fruit extract
 Laminaria japonica extract
 Lecithin
 25 Marsilea minuta extract
 Nettle (*Urtica dioica*) extract
 Palmitamidodecanediol
 Pearls (*Margarita margarita*)
 PEG-42 Ebiriko ceramides extract
 30 Phenyl trimethicone
 Phytantriol
 Polygonum multiflorum extract

35 Potassium cocoyl hydrolyzed collagen
 Retinyl palmitate polypeptide
 Salvia miltiorrhiza extract
 Silt
 Sodium cocoyl hydrolyzed collagen
 40 Soluble transgenic elastin
 Steartrimonium hydroxyethyl hydrolyzed
 collagen
 Stearyl methicone

45 **Skin healing**
 Calendula officinalis extract
 Glycoproteins
 Hydrocoryl (*Centella asiatica*) extract
 Oat (*Avena sativa*) extract
 50 Sandalwood (*Santalum album*) extract
 Spearmint (*Mentha viridis*) extract

Skin lightening/whitening agent

Ascorbic acid polypeptide
 Bearberry (*Arctostaphylos uva-ursi*) extract
 Hydroquinone-beta-D-glucopyranoside
 Lemon (*Citrus medica limonum*) peel extract
 Pearls (*Margarita margarita*)

Skin protectant

Acetylmethionyl methylsilanol elastinate
 Allantoin, A. aluminum hydroxide
 Aloe barbadensis, A.b. extract
 Aluminum starch octenylsuccinate
 Anise (*Pimpinella anisum*) extract
 Arnica montana extract
 Artemisia apiacea extract
 Ascorbyl methylsilanol pectinate
 Astrocaryum tucuma extract
 Bactris gasipaes extract
 Betaglucan
 Bishydroxyethyl biscetyl malonamide
 Bletia hyacinthina extract
 C18-70 Isoparaffin
 Calendula amurensis extract
 Carboxymethyl chitin
 Carcinia cambogia extract
 Carrot (*Daucus carota*) extract
 Carrot (*Daucus carota sativa*) oil
 Catalpa kaempfera extract
 Chenopodium album extract
 Chitosan
 Chrysanthemum morifolium extract
 Collagen
 Corn poppy (*Papaver rhoeas*) extract
 Crataegus cuneata extract
 Crataegus monogina extract
 Cypress (*Cupressus sempervirens*) extract
 Dimethicone
 Dimethiconol fluoroalcohol dilinoleic acid
 Dimethiconol hydroxystearate, D. stearate
 Dimethylsilanol hyaluronate
 Echitea glauca extract
 Embryo extract
 Entada phaseoloides extract
 Equisetum arvense extract
 Eupatorium fortunei extract
 Euterpe precatoria extract
 Fenugreek extract
 fomistopsis officinalis oil, F. pinicola extract
 Galla sinensis extract
 Gentian (*Gentiana lutea*) extract
 Gleditsia sinensis extract
 Glyceryl ricinoleate
 Glycolipids
 Hierochloe odorata extract

Hyaluronic acid
 Hydrogenated lecithin
 Hydrolyzed lupine protein
 Hydrolyzed milk protein
 5 Hydrolyzed mushroom (*Tricholoma matsutake*)
 extract

 Isodecyl salicylate
 Jojoba (*Buxus chinensis*) oil
 10 Lady's Thistle (*Silybum marianum*) extract
 Laminaria japonica extract
 Ligusticum jeholense extract
 Liposomes
 Magnolis spp. extract
 15 Mango kernel oil
 marsilea minuta extract
 Melaleuca hypericifolia extract
 Melaleuca uncinata extract
 Melaleuca wilsonii extract
 20 Methylsilanol tri PEG-8 glyceryl cocoate
 Oat (*Avena stiva*) meal
 Oyster (*Ostrea*) shell extract
 Palmitamidodecanediol
 Pearls (*Margarita margarita*)
 25 Pentahydrosqualene
 Perfluorodecalin
 Perfluoropolymethylisopropyl ether
 Petrolatum
 PEG-8/SMDI copolymer
 30 PEG-42 Ebiriko ceramides extract
 Pfaffia spp. extract
 Phospholipids
 Plankton extract
 Polygonum multiflorum extract
 35 Pongamol
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propyltrimonium hydrolyzed collagen
 Quinoa (*Chenopodium quinoa*) extract, oil
 40 *Salvia miltiorrhiza* extract
 Sambucus nigra extract
 Shark liver oil
 Shorea robusta extract
 Sodium chondroitin sulfate
 45 Soluble transgenic elastin
 Steartrimonium hydroxyethyl hydrolyzed
 collagen
 Sterculia platanifolia extract
 Superoxide dismutase
 50 Trachea hydrolysate
 Wheat (*Triticum vulgare*) germ extract, protein
 White nettle (*Lamium album*) extract
 Withania somniferum extract

Xanthozylum bungeanum extract
 Zinc oxide

Skin smoothing agent

Althea officinalis extract
 Coltsfoot (*Tussilago farfara*) leaf extract
 Comfrey (*Symphytum officinale*) leaf extract
 Plantain (*Plantago major*) extract
 Sericin

Skin softening

Clays (white, yellow, red, green, pink)
 Cucumber (*Cucumis sativus*) extract
 Kelp (*Macrocystis pyrifera*) extract
 Peach (*Prunus perisca*) extract
 Phenethyl dimethicone

Skin soothing

Calendula officinalis extract
 Cherry bark extract
 Cucumber (*Cucumis sativus*) extract
 Garlic (*Allium sativum*) extract
 Hyssop (*Hyssopus officinalis*) extract
 Jasmine (*Jasminum officinale*) extract
 Kelp (*Macrocystis pyrifera*) extract
 Mango kernel oil
 Meadowsweet (*Spiraea ulmaria*) extract
 Quince (*Pyrus cydonia*) seed extract
 Slippery elm extract
 Valerian (*Valeriana officinalis*) extract
 Willow (*Salix alba*) extract
 Witch hazel (*Hamamelis virginiana*) extract

Solubilizer

Acetyl monoethanolamine
 Almond oil PEG-6 esters
 2-Aminobutanol
 Aminoethyl propanediol
 Aminomethyl propanediol, A. propanol
 Apricot kernel oil PEG-6 esters
 Benzalkonium chloride
 Butoxydiglycol
 Butyl glucoside
 Butylene glycol
 Butyloctanol
 Capric-caprylic mono-diglyceride
 Capryl caprylylglucoside
 Caprylic/capric triglyceride
 Caprylic/capric/linoleic triglyceride
 Caprylic/capric/oleic triglycerides
 Caprylyl/capryl glucoside
 Ceteareth-20

	Ceteth-10	PEG-40 hydrogenated castor oil PCA isostearate
	Cetyl PPG-2 isodeceth-7 carboxylate	PEG-40 sorbitan diisostearate
	Cholesterol	PEG-45 palm kernel glycerides
	Corn oil PEG-6 esters	PEG-48 hydrogenated castor oil
5	Decaglycerol monodiolate	PEG-50 castor oil
	Diethanolamine	PEG-50 hydrogenated castor oil
	Dilaureth-10 phosphate	PEG-60 almond glycerides
	Dimethyl octynediol	PEG-60 castor oil
10	Dioleth-8 phosphate	PEG-60 corn glycerides
	Glycereth-7 -26	PEG-60 glyceryl isostearate, P.g. stearate
	Glyceryl caprylate, G. dilaurate	PEG-60 hydrogenated castor oil
	Glyceryl caprylate/caprate	PEG-60 lanolin
	Isoeicosane	PEG-70 mango glycerides
	Isopropanolamine	PEG-75 lanolin
15	Isosteareth-20	PEG-75 shea butter glycerides
	Laneth-5, -15	PEG-75 shorea butter glycerides
	Laureth-23	PEG-80 hydrogenated castor oil
	Methylated cyclodextrin	PEG-80 jojoba acid/alcohol
	Myreth-3	PEG-80 sorbitan laurate
20	Myreth-3-octanoate	PEG-100 castor oil
	Nonoxynol-10, -12, -14, -40, -50	PEG-100 hydrogenated castor oil
	Octoxynol-11, -40	PEG-120 jojoba acid/alcohol
	Oleoamphohydroxypropylsulfonate	PEG-200 trihydroxystearin
	Oleth-3, -5, -10, -15, -20, -25, -50	Poloxamer 407
25	Oleth-20 phosphate	Polyglyceryl-3 oleate
	PEG-4, -6, -8, -12, -16, -20, -32, -40	Polyglyceryl-6 dioleate
	PEG-4 dilaurate	Polyglyceryl-10 decaoleate, P. tetraoleate
	PEG-6 capric/caprylic glycerides	Polysorbate 20, 60, 80
	PEG-6 methyl ether	PPG-2-isodeceth-4, -6, -9, -12
30	PEG-8 distearate	PPG-3 isosteareth-9
	PEG-12 laurate	PPG-3 isoceteth-20 acetate
	PEG-15 castor oil	PPG-5-ceteth-10 phosphate
	PEG-18 stearate	PPG-5-ceteth-20
	PEG-20 glyceryl isostearate, P.g. laurate	PPG-6-decyltetradeceth-12, -20, -30
35	PEG-20 glyceryl oleate, P.g. stearate	PPG-12-PEG-65 lanolin oil
	PEG-20 methyl glucose sesquisteate	PPG-15 stearyl ether
	PEG-20 sorbitan isostearate	PPG-18 butyl ether
	PEG-20 sorbitan triisostearate	PPG-24 butyl ether
	PEG-24 hydrogenated lanolin	PPG-26-buteth-26
40	PEG-25 castor oil	PPG-33 butyl ether
	PEG-25 hydrogenated castor oil	PPG-33-buteth-45
	PEG-30 castor oil	PPG-40-PEG-60 lanolin oil
	PEG-30 glyceryl cocoate	PPG-50 cetyl ether
	PEG-30 glyceryl isostearate	Propylene glycol dicaprylate,
45	PEG-30 glyceryl laurate	dicaprylate/dicaprate
	PEG-30 glyceryl oleate	Ricinoleamide DEA
	PEG-30 glyceryl stearate	Ricinoleth-40
	PEG-33 castor oil	Sodium alpha olefin sulfonate
	PEG-35 castor oil	Sodium lauryl sulfate
50	PEG-36 castor oil	Sodium methylnaphthalenesulfonate
	PEG-40 castor oil	Triethanolamine
	PEG-40 glyceryl laurate, P.g. stearate	Trioctanoin
	PEG-40 hydrogenated castor oil	Tromethamine

Solvent

Acetic acid
 Acetone
 Alcohol, A. denat
 5 Benzophenone
 Butoxydiglycol
 Butyl acetate
 n-Butyl alcohol
 Butyl myristate, B. stearate
 10 Butylene glycol
 C9-11 isoparaffin
 C10-11 isoparaffin
 C10-13 isoparaffin
 Caprylic alcohol
 15 Castor (Ricinus communis) oil
 Cetearyl octanoate
 Cetyl stearyl octanoate
 Chlorobutanol
 Decyl alcohol
 20 Diethylene glycol
 Diethylene glycol dibenzoate
 Diethyl sebacate
 Diisocetyl adipate
 Diisopropyl adipate, D. sebacate
 25 Dimethyl phthalate
 Dipropylene glycol
 Dipropylene glycol dibenzoate
 Ethoxydiglycol
 Ethyl acetate, E. lactate
 30 Ethyl myristate, E. oleate
 2-Ethylhexyl isostearate
 Glycerin
 Glycofurol
 Heptane
 35 Hexyl alcohol
 Hexylene glycol
 Isobutyl stearate
 Isocetyl salicylate
 Isodecyl benzoate, I. isononanoate
 40 Isodecyl octanoate, I. oleate
 Isododecane
 Isoeicosane
 Isohexadecane
 Isopropyl alcohol, I. myristate
 45 Isostearyl stearoyl stearate
 Laureth-2 acetate
 Methoxydiglycol
 Methoxyisopropanol
 Methyl alcohol
 50 Methyl propanediol
 Methylene chloride
 MEK
 MIBK

Morpholine

Octyl benzoate, O. isononanoate
 Octyl laurate, O. palmitate
 Octyldodecyl lactate
 Olive oil PEG-6 esters
 Peanut oil PEG-6 esters
 Pentane
 Petroleum distillates
 PEG-6 methyl ether
 PEG-12
 PEG-20 hydrogenated castor oil
 PEG-33 castor oil
 PEG-50 glyceryl cocoate
 Polyglyceryl-2 dioleate
 Polyglyceryl-3 diisostearate
 Polyoxyethylene glycol dibenzoate
 Polypropylene glycol dibenzoate
 PPG-2 myristyl ether propionate
 PPG-3
 PPG-20 lanolin alcohol ether
 Propyl alcohol
 Propylene carbonate
 Propylene glycol
 Propylene glycol dibenzoate
 Propylene glycol methyl ether
 Propylene glycol myristate
 Pyridine
 Sesame (Sesamum indicum) oil
 Stearyl heptanoate
 Toluene
 Xylene

SPF booster

Borojoa sorbilis extract
 Isohexadecyl salicylate
 Styrene/acrylates copolymer
 Titanium dioxide
 Yeast (Saccheromyces cerevisiae) extract (Faex)

Stabilizer

Acrylates-VA crosspolymer
 Acrylates/ceteth-20 methacrylates copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Acrylates/vinyl isodecanoate crosspolymer
 Alkyldimethylamine oxide
 C10 polycarbamyl polyglycol ester
 Calcium alginate
 Cocamidopropyl dimethylamine lactate
 Cocamine oxide
 Colloidal silica sols
 Cyclodextrin
 Disodium EDTA
 Gellan gum

	Glyceryl diisostearate, G. stearate SE	3-Benzylidene camphor
	Glyceryl mono-di-tri-caprylate	Borojoa sorbilis extract
	Hydrogenated coco-glycerides	C12-15 alkyl benzoate
	Hydrogenated C12-18 triglycerides	Coffee (Coffea arabica) bean extract
5	Hydrogenated tallow glycerides	Ethyl salicylate
	Hydrolyzed oat flour	Glyceryl PABA
	Hydroxyoctacosanyl hydroxystearate	Homosalate
	Karaya (Stericulia urens) gum	Hydroquinone-beta-D-glucopyranoside
	Laureth-3	Isoamyl p-methoxycinnamate
10	Maltitol	Isopropylbenzyl salicylate
	Methylated cyclodextrin	Job's tears (Coix lacryma-jobi) extract
	Oleamide	Menthyl anthranilate
	PEG-40 stearate	Octyl dimethyl PABA, O. methoxycinnamate
	PEG-40/dodecyl glycol copolymer	Octyl salicylate, O. triazone
15	Perfluoropolymethylisopropyl ether	Oryzanol
	Polyethylene paste	Pansy (Viola tricolor) extract
	PPG-5 lanolin wax	PEG-25 PABA
	PPG-7-buteth-10	Phenylbenzimidazole sulfonic acid
	PPG-10 cetyl ether phosphate	Rice (Oryza sativa) bran oil
20	Propylene carbonate, P. glycol alginate	TEA-salicylate
	PVM/MA decadiene crosspolymer	Titanium dioxide
	Sodium acrylates/vinyl isodecanoate crosspolymer	<u>Sunscreen UVB</u>
	Sodium carbomer	Benzophenone-5
25	Sorbitan laurate	Eclipta alba extract
	Stearic hydrazide	PEG-25 PABA
	2,2',4,4'-Tetrahydroxybenzophenone	Steareth-100
	Tricaprin	Tridecyl salicylate
	Tricaprylin	<u>Superfatting agent</u>
30	Trilaurin	Linoleamide DEA
	Trimyristin	PEG-20 almond glycerides
	Tripalmitin	PEG-60 lanolin
	Tristearin	PEG-75 lanolin
35	<u>Stimulant</u>	<u>Surfactant</u>
	Capsicum frutescens extract	Alkyl dimethyl betaine
	Eleuthero ginseng (Acanthopanax senticosus) extract	Alkyldimethylamine oxide
	Guarana (Paullinia cupana) extract	Ammonium cocoyl sarcosinate
40	Lactococcus hydrolysate	Ammonium C12-15 alkyl sulfate
	Methylsilanol elastinate	Ammonium dimethicone copolyol sulfate
	Methylsilanol hydroxyproline aspartate	Ammonium laureth-5 sulfate
	TEA-hydroiodide	Ammonium laureth-12 sulfate
	Tocopheryl nicotinate	Ammonium laureth sulfate
45	Urocanic acid	Ammonium lauroyl sarcosinate
	Yeast (Saccheromyces cerevisiae) extrate (Faex)	Ammonium lauryl sulfate, A.I. sulfosuccinate
	Zedoary (Curcuma zedoraria) oil	Ammonium myreth sulfate
	Zinc DNA	Ammonium nonoxynol 4 sulfate
50	<u>Sunscreen</u>	Azelamide MEA
	Basil (Basilicum santum) oil extract	C20-40 alcohol ethoxylate
	Basil (Ocimum basilicum) extract	C30-50 alcohol ethoxylate
	Benzophenone-3 -4	C40-60 alcohol ethoxylate
		Calcium dodecylbenzene sulfonate

	Calcium laurate	Disodium oleth-3 sulfosuccinate
	Ceteareth-2 phosphate	Disodium ricinoleamido MEA-sulfosuccinate
	Ceteareth-5 phosphate	Disodium tallamido MEA-sulfosuccinate
	Ceteareth-10 phosphate	Disteareth-2 lauroyl glutamate
5	Cetoleth-25	Disteareth-5 lauroyl glutamate
	Cetyl betaine, C. phosphate	Ethoxylated fatty alcohol
	Cocamide MEA ethoxylate	Ethoxylated glycerol sorbitan saturated fatty acid ester
	Cocamidopropyl betaine, potassium salt	Ethoxylated glycerol sorbitan unsaturated fatty acid ester
10	Cocamidopropyl betaine ammonium salt	Glycereth-25 PCA isostearate
	Cocamidopropyl hydroxy sultaine	Glycereth-26 phosphate
	Cocamidopropyl hydroxy sultaine, ammonium salt	glyceryl hydroxystearate
	Cocamidopropyl hydroxy sultaine, potassium salt	Hydrogenated tallowoyl glutamic acid
15	Cocamidopropylamine oxide	Isopropyl hydroxybutyramide dimethicone copolyol
	Coceth-7 carboxylic acid	Lauramidopropyl betain
	Coco-glucoside	Laureth-1, -2, -3, -4, -7, -12, -16
	Cocoamphodiacetate lauryl-laureth sulfate	Laureth-3 carboxylic acid, L. phosphate
	Cocoamphodiacetate lauryl sulfate	Laureth-5 carboxylic acid
20	Cocoamphodiacetate trideceth sulfate	Laureth-11 carboxylic acid
	Coco phosphatidyl PG-dimonium chloride	Lauroyl sarcosine
	N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate	Lauryl dimethylamine cyclocarboxypropyloleate
	Cocoyl glutamic acid	Laryl hydroxyethyl imidazoline
	Cocoyl hydrolyzed soy protein	Linoleamide DEA
25	Cocoyl hydroxyethyl imidazoline	Magnesium laureth-8 sulfate
	C11-15 pareth-9, -12, -20, -30, -40	Meroxapol 105, 171, 172
	C12-13 pareth sulfate	MEA-lauryl sulfate
	C12-13 pareth-5 carboxylic acid	Mixed isopropanolamines myristate
	C12-15 pareth-12	Myreth-7
30	C14-15 pareth-8 carboxylic acid	Myristoyl sarcosine
	DEA-oleth-5-phosphate	Myristyl alcohol
	DEA-oleth-20-phosphate	Nonoxynol-7, -9, -13, -15
	Deceth-3, -6, -8	Nonoxynol-10 carboxylic acid
	Decyltetradeceth-25	Octoxynol-10, -12
35	Diceteareth-10 phosphoric acid	Octyldodeceth-10, -16
	Dimethicone copolyol	Oleoyl sarcosine
	Dimethicone copolyol almondate, D.c. isostearate	Oleth-2 phosphate
	Dimethicone copolyol laurate, D.c. olivate	Oleth-5 phosphate
40	Dimethicone copolyol phthalate	Oleyl betaine
	Dimethicone copolyolamine	Oleyl hydroxyethyl imidazoline
	Dimethicone propyl PG-betaine	Palmitamine oxide
	Diocetyldodeceth-2 lauroyl glutamate	Palmityl betaine
	Diocetyldodeceth-5 lauroyl glutamate	PCA ethyl cocoyl arginate
45	Diocetyldodecyl lauroyl glutamate	PEG-7 hydrogenated castor oil
	Disodium capryloamphodiacetate	PEG-8 caprylic/capric glycerides
	Disodium cocoamphodiacetate	PEG-8 laurate
	Disodium hydrogenated tallow glutamate	PEG-8 stearate
	Disodium laneth-5 sulfosuccinate	PEG-15 glyceryl stearate
50	Disodium lauramido MEA-sulfosuccinate	PEG-25 glyceryl isostearate
	Disodium laureth sulfosuccinate	PEG-27 lanolin
	Disodium oleamido MIPA-sulfosuccinate	PEG-30 lanolin
	Disodium oleamido PEG-2 sulfosuccinate	PEG-40 castor oil

	PEG-40 glyceryl stearate	Sodium laureth-11 carboxylate
	PEG-40 jojoba oil, P. lanolin	Sodium laureth-13-carboxylate
	PEG-60 glyceryl isostearate, P.g. stearate	Sodium laureth sulfate
	PEG-80 jojoba oil, P. sorbitan laurate	Sodium lauroamphoacetate
5	PEG-120 jojoba oil	Sodium lauroyl glutamate
	Pentasodium triphosphate	Sodium lauroyl hydrolyzed collagen
	Poloxamer 101, 122	Sodium lauroyl sarcosinate, S.I. taurate
	Polyglyceryl-2 dioleate	Sodium magnesium laureth sulfate
	Polysiloxane-polyether copolyer	Sodium methyl cocoyl taurate
10	Potassium cocoyl glycinate	Sodium methyl oleoyl taurate
	Potassium cocoyl hydrolyzed collagen	Sodium myristoyl glutamate
	Potassium C9-15 phosphate ester	Sodium myristoyl hydrolyzed collagen
	Potassium lauroyl hydrolyzed collagen	Sodium myristoyl sarcosinate
	Potassium lauryl sulfate	Sodium myristyl sulfate
15	Potassium myristoyl hydrolyzed collagen	Sodium nonoxynol-6 phosphate
	Potassium oleoyl hydrolyzed collagen	Sodium octoxynol-2 ethane sulfonate
	Potassium palmitate	Sodium octyl sulfate
	Potassium undecylenoyl hydrolyzed collagen	Sodium oleoyl hydrolyzed collagen
	PPG-2-isodeceth-4, -6, -9, -12	Sodium stearyl hydrolyzed collagen
20	PPG-6 C12-18 pareth-11	Sodium trideceth sulfate
	Protein hydrolysates	Sodium undecylenoyl hydrolyzed collagen
	Quaternium-80	Sodium/TEA-lauroyl hydrolyzed collagen
	Quillaja saponaria extract	Sodium/TEA-lauroyl hydrolyzed keratin
	Raffinose laurate, R. myristate, R. oleate	Sorbitan isostearate
25	Raffinose palmitate, R. stearate	Stearoyl sarcosine
	Ricinoleamidopropyl betain	Sulfated castor oil
	Silicone quaternium-1, -8, -9	TEA-cocoyl glutamate
	Sodium alpha olefin sulfonate	TEA-cocoyl hydrolyzed collagen
	Sodium cocoamphoacetate	TEA-cocoyl hydrolyzed soy protein
30	Sodium cocoyl hydrolyzed wheat protein	TEA-C12-15 alkyl sulfate
	Sodium cocoyl isethionate	TEA-hydrogenated tallow glutamate
	Sodium C12-13 sulfate	TEA-lauroyl glutamate
	Sodium C12-14 pareth-2 sulfate	TEA-lauroyl keratin amino acids
	Sodium C12-15 pareth-3 sulfonate	TEA-lauroyl sarcosinate
35	Sodium C12-15 pareth-7 carboxylate	TEA-lauryl sulfate
	Sodium C12-15 pareth-7 sulfonate	TEA-myristoyl hydrolyzed collagen
	Sodium C12-15 pareth-8 carboxylate	Tocophereth-5 -10 -18 -20 -30 -50 -70
	Sodium C12-15 pareth-15 sulfonate	Trideceth-7 carboxylic acid
	Sodium C12-18 alkyl sulfate	Trideceth-9
40	Sodium C13-17 alkane sulfonate	Trideceth-19-carboxylic acid
	Sodium C14-16 olefin sulfonate	Tridecyl ethoxylate
	Sodium cetearyl sulfate	Triethanolamine C10-14 sulfate
	Sodium cetyl oleyl sulfate	Trilauryl phosphate
	Sodium coco-tallow sulfate	Wheat germamidopropyl betaine
45	Sodium cocoyl glutamate	Yucca vera extract
	Sodium cocoyl hydrolyzed collagen	
	Sodium cocoyl hydrolyzed soy protein	
	Sodium cocoyl sarcosinate	
	Sodium dimethicone copolyol acetyl	
50	methyltaurate	
	Sodium hydrogenated tallow glutamate	
	Sodium isodecyl sulfate	
	Sodium laureth-5 carboxylate	

Suspending agent

Acrylates/ceteth-20 methacrylates copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Algin
 Bentonite
 C10 polycarbamyl polyglycol ester
 Calcium alginate

	Carbomer, C. 934	_____ /C10-C30 alkyl acrylate crosspolymer
	Carrageenan (Chondrus crispus)	_____ /ceteth-20 itaconate copolymer
	Cellulose gum	_____ /ceteth-20 methacrylates copolymer
	Cetyl hydroxyethylcellulose	_____ /steareth-20 itaconate copolymer
5	Dihydrogenated tallow phthalic acid amide	_____ /steareth-20 methacrylate copolymer
	Distearyl phthalic acid amide	_____ /steareth-50 acrylate copolymer
	Guar (Cyanopsis tetragonoloba) gum	_____ /vinyl isodecanoate crosspolymer
	Hectorite	_____ acid/acrylonitrogens copolymer
	Hydroxypropylcellulose	_____
10	Isobutylene/MA copolymer	_____ /magnesium hydroxide stearate
	Magnesium aluminum silicate	_____ acrylates/acrylonitrogens copolymer
	Methylcellulose	_____ alginate
	Pentasodium triphosphate	_____ alcohol
	Polyethylene, P. micronized	_____ acid
15	Propylene glycol alginate	_____ alcohol, B. behenate
	Quaternium-18 bentonite	_____ nite
	Quaternium-18 hectorite	_____ olycarbamy polyglycol ester
	Sodium magnesium silicate	_____ 5 alcohols
	Sodium polynaphthalenesulfonate	_____ 6 alcohols
20	Stearalkonium bentonite, S. hectorite	_____ 6 acid
	Steareth-10 allyl ether/acrylates copolymer	Calcium alginate
	_____ (Astragalus gummifer) gum	Calcium carrageenan
	_____ ribehenin	Caprylic alcohol
	_____ rihydroxystearin	Carbomer
25	_____ omethamine magnesium aluminum silicate	Carboxymethyl hydroxyethylcellulose
	_____ anthan gum	Carrageenan (Chondrus crispus)
	<u>Sweetener</u>	Cellulose, C. gum
	_____ saccharin	Cetearyl alcohol, C. behenate
30	_____	Cetearyl octanoate, C. stearate
	_____ acid	Cetostearyl stearate
	_____ acid	Cetyl alcohol
	_____, ammoniated	Cetyl hydroxyethylcellulose
	_____ corn starch	Cetyl myristate, C. palmitate
35	_____	Cocamide
	_____	Cocamide MEA, C. MIPA
	_____	Cocamidopropylamine oxide
	_____	Coco-betaine
	_____ saccharin	Coco-rapeseedate
40	_____	Coco/oleamidopropyl betaine
	_____	Cocoyl amido hydroxy sulfo betaine
	_____	Cocoyl monoethanolamide ethoxylate
	_____ <u>accelerator</u>	Colloidal silica sols
	_____ tyrosine	DEA-hydrolyzed lecithin
45	Carrot (Daucus carota) extract	DEA-linoleate
	_____ acetyl tyrosinate methylsilanol	DEA-oleth-3 phosphate
	_____ droxyacetone	DEA oleth-10 phosphate
	_____ maly tyrosinate	Decyl alcohol
	_____ alba extract in white emulsion	Dextran
50	_____ tyrosinate	Dextrin
	_____ <u>ckener</u>	Dilaureth-10 phosphate
	_____ -VA crosspolmer	Dioleth-8 phosphate
		DMHF
		Ethoxylated fatty alcohol

	Gellan gum	
	Glyceryl behenate, G. stearate	
	Glyceryl polymethacrylate	
	Guar (Cyanopsis tetragonoloba) gum	
5	Guar hydroxypropyltrimonium chloride	
	Hectorite	
	Hexyl alcohol	
	Hydrated silica	
	Hydrogenated rapeseed oil	
10	Hydrogenated starch hydrolysate	
	Hydrogenated talloweth-60 myristyl glycol	
	Hydrolyzed oat flour	
	Hydrolyzed transgenic collagen	
	Hydroxyethylcellulose	
15		
	Hydroxypropyl chitosan	PEG-6 beeswax
	Hydroxypropyl guar	PEG-7 hydrogenated castor oil
	Hydroxypropyl methylcellulose	PEG-8
	Hydroxypropylcellulose	PEG-8 dioleate, P. distearate
20	Isoceteth-10	PEG-8 stearate
	Isostearamide DEA	PEG-9M
	Isostearamidopropylamine oxide	PEG-12 beeswax
	Isostearamphopropionate	PEG-18 glyceryl oleate/cocoate
	Jojoba wax	PEG-23M
25	Karaya (Stericulia urens) gum	PEG-28 glyceryl tallowate
	L _____ DEA, L. MEA, L. MIPA	PEG-40 jojoba oil
	L _____ midopropyl betaine	PEG-45M
	Laureth-10	PEG-50 tallow amide
	L _____ -linoleic DEA	PEG-55 propylene glycol oleate
30	L _____ -linoleoyl diethanolamide	PEG-75 stearate
	L _____ -myristoyl diethanolamide	PEG-90M
	L _____ alcohol, L. betaine	PEG-100 stearate
	L _____ amide DEA, L. MEA	PEG-120 methyl glucose dioleate
	L _____ eic acid	PEG-150 distearate
35	L _____ mic acid	PEG-150 pentaerythrityl tetrastearate
	L _____ bean (Ceratonia siliqua) gum	PEG-160M
	Magnesium aluminum silicate	PEG-200 glyceryl stearate
	MDM hydantoin	PEG-200 glyceryl tallowate
	Methylcellulose	Pentaerythrityl tetrabehenate
40	Montmorillonite	Pentaerythrityl tetrastearate
	Myristamide DEA, M. MEA	Poloxamer 105, 124, 185, 237, 238, 338, 407
	Myristamine oxide	Polyacrylic acid
	Myristyl alcohol	Polysorbate 20
	Octacosanyl stearate	Potassium alginate, P. chloride
45	Oleamide, O. DEA, O. MEA	Potassium oleate, P. stearate
	Palmitamide MEA	PPG-5-ceteth-10 phosphate
	Pectin	Propylene glycol stearate
	PEG-2 laurate	PVM/MA decadiene crosspolymer
	PEG-3 distearate, P. lauramide	PVP
50	PEG-3 lauramine oxide	Quaternium-18 bentonite
	PEG-4 diisostearate, P. oleamide	Quaternium-18 hectorite
	PEG-5M	Rapeseed oil, ethoxylated high erucic acid

- Ricinoleamide MEA
Sesamide DEA
Sodium acrylates/vinyl isodecanoate crosspolymer
Sodium carbomer, S. carrageenan
5 Sodium ceteth-13-carboxylate
Sodium chloride
Sodium magnesium silicate, S. stearate
Sorbitan sesquisteate, S. tristearate
Soyamide DEA
10 Soyamidopropyl betaine
Starch polyacrylonitrile copolymer-potassium salt
Starch polyacrylonitrile copolymer-sodium salt
Stearalkonium bentonite, S. hectorite
Stearamide
15 Stearamide DEA, S. MEA, S. MEA-stearate
Stearamidopropyl dimethylamine lactate
Stearamine oxide
Steareth-10 allyl ether/acrylates copolymer
Stearic acid
20 Stearyl alcohol
Synthetic beeswax
Tallowamide MEA
TEA-acrylates/acrylonitrogens copolymer
Tragacanth (*Astragalus gummifer*) gum
25 Tribehenin
Trihydroxystearin
Tromethamine magnesium aluminum silicate
Wheat germamide DEA
Wheat germamidopropyl betain
30 Xanthan gum

Thixotrope

- Bentonite
Hectorite
35 Sodium magnesium silicate
Stearalkonium bentonite

Toner

- Althea officinalis extract
40 Clover (*Trifolium pratense*) extract
Dog rose (*Rosa canina*) hips extract
Ginseng (*Panax ginseng*) extract
Horsetail extract
Lemon bioflavonoids extract
45 Meadowsweet (*Spiraea ulmaria*) extract
Nettle (*Urtica dioica*) extract
Rose (*Rosa multiflora*) extract
Rosemary (*Rosmarinus officinalis*) extract

UVA absorber

- 50 Benzophenone-1, -2, -3, -4, -6, -8, -9, -11, -12
Butyl methoxydibenzoylmethane
Corallina officinalis

Isopropyl dibenzoylmethane
Menthyl anthranilate
2,2',4,4'-Tetrahydroxybenzophenone
Titanium dioxide
Zinc oxide

UVB absorber

Argania spinosa oil
Benzophenone-1 -2 -3 -4 -6 -9 -11
Corallina officinalis
DEA-methoxycinnamate
Drometrizole
Ethyl dihydroxypropyl PABA
Etocrylene
homosalate
Isoamyl p-methoxycinnamate
Isopropyl methoxycinnamate
Isopropylbenzyl salicylate
4-Methylbenzylidene camphor
Octocrylene
Octrizole
Octyl dimethyl PABA
Octyl methoxycinnamate
Octyl salicylate, O. triazne
PABA
PEG-25 PABA
Phenylbenzimidazole sulfonic acid
Shea butter, ethoxylated
TEA-salicylate
Titanium dioxide
TriPABA panthenol
Zinc oxide

Vegetable oil

Apricot (*Prunus armeniaca*) kernel oil
Avocado (*Persea gratissima*) oil
Baobab oil
Calendula officinalis oil
Chaulmoogra (*Taraktogenos kurzii*) oil
Coconut (*Cocos nucifera*) oil
Corn (*Zea mays*) oil
Cottonseed (*Gossypium*) oil
Gold of pleasure oil
Grape (*Vitis vinifera*) seed oil
Hazel (*Corylus avellana*) nut oil
Hybrid sunflower (*Helianthus annuus*) oil
Hydrogenated coconut oil
Hydrogenated cottonseed oil
Hydrogenated vegetable oil
Jojoba (*Buxus chinensis*) oil
Kukui (*Aleurites molaccana*) nut oil
Macadamia ternifolia nut oil
Meadowfoam (*Limnanthes alba*) seed oil

- Mexican poppy oil
 Palm (*Elaeis guineensis*) kernel oil
 Partially hydrogenated soybean oil
 Peach (*Prunus persica*) kernel oil
 5 Peanut (*Arachis hypogaea*) oil
 Pecan (*Carya illinoensis*) oil
 Pumpkin (*Cucurbita pepo*) seed oil
 Quinoa (*Chenopodium quinoa*) oil
 Rapeseed (*Brassica capestris*) oil
 10 Rice (*Oryza sativa*) bran oil
 Safflower (*Carthamus tinctorius*) oil
 Seabuckthorn oil
 Sesame (*Sesamum indicum*) oil
 Sisymbrium irio oil
 15 Soybean (*Glycine soja*) oil
 Sunflower (*Helianthus annuus*) seed oil
 Walnut (*Juglans regia*) oil
 Wheat (*Triticum vulgare*) germ oil
 Wild borage oil

20

Vitamin

- Aesculus chinensis extract
 Ascorbic acid
 Ascorbic acid polypeptide
 25 Ascorbyl palmitate
 Biotin
 Calcium pantothenate
 Cholecalciferol
 Cyanocobalamin
 30 Eclipta alba extract
 Emblica officinalis extract
 Equisetum arvense extract
 Ergocalciferol
 Esculin
 35 Ethyl linoleate
 Folic acid
 Laminaria japonica extract
 Marsilea minuta extract
 Melaleuca bracteata extract
 40 Menadione
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Niacin
 Niacinamide, N. ascorbate
 45 Nicotinamide
 Nicotinic acid
 Ocimum basilicum extract
 Panthenyl triacetate
 Pantothenic acid
 50 Phytonadione
 Pyridoxine HCl
 Retinol
 Retinyl acetate, R. palmitate

Retinyl palmitate polypeptide
 Retinyl propionate
 Riboflavin tetraacetate
 Sodium ascorbate
 Thiamine HCL
 Tocopherol
 Tocopheryl acetate, T. succinate

Wax

Bayberry (*Myrica cerifera*) wax
 Behenoxy dimethicone
 C16-18 alkyl methicone
 Candelilla (*Euphorbia cerifera*) wax
 Carnauba (*Copernicia cerifera*) wax
 Ceresin
 Cetyl dimethicone, C. isooctanoate
 Dialkyldimethylpolysiloxane
 Dimethiconol hydroxystearate
 Dimethiconol stearate
 Hydrogenated castor oil
 Hydrogenated cottonseed oil
 Hydrogenated jojoba oil, H.j. wax
 Hydrogenated palm kernel oil
 Hydrogenated rapeseed oil
 Hydrogenated rice bran wax
 hydrogenated vegetable oil
 Isooctadecyl isononanoate
 Japan (*Rhus succedanea*) wax
 Jojoba esters
 Montan (Montan cera) wax
 Ouricury wax
 Ozokerite
 Polyglyceryl-3 beeswax
 Spermaceti
 Stearoxymethicone/dimethicone copolymer
 Stearoxytrimethylsilane
 Synthetic candelilla wax
 Synthetic carnauba

Wetting agent

Benzalkonium chloride
 Benzethonium chloride
 Cetalkonium chloride
 Ceteareth-20
 Ceteth-20
 Cetyl pyridinium chloride
 Cocoamphodipropionic acid
 Decaglycerol monodiolate
 Deceth-9
 Dihydroabietyl methacrylate
 Dimethicone copolyol methyl ether
 Dimethicone copolyol phthalate
 Dioctyl sodium sulfosuccinate

- Ethyl hydroxymethyl oleyl oxazoline
Hydroxylated milk glycerides
Isolaureth-6
Lanolin acid
5 Lauryl pyrrolidone
Lecithin
Methyl hydrogenated rosinat
Methyl rosinat
Nonyl nonoxynol-5
10 Octoxynol-8, 70
Oleth-15
Oleth-20 phosphate
PEG-9 castor oil
PEG-15 castor oil
15 PEG-20 glyceryl stearate
PEG-20 sorbitan triisostearate
PEG-45 palm kernel glycerides
PEG-60 almond glycerides, P.corn glycerides
PEG-60 shea butter glycerides
20 PEG-70 mango glycerides
PEG-75 shorea butter glycerides
PEG-80 sorbitan laurate
Poloxamer 123, 181, 182, 184, 235, 334
Polyether trisiloxane
25 Polyglyceryl-3 oleate
Polyglyceryl-6 dioleate
Polyglyceryl-10 tetraoleate
Polysorbate 60, 80
PPG-2-isodeceth-4, -6, -9, -12
30 PPG-10 lanolin alcohol ether
Propylene glycol
Sodium butoxyethoxy acetate
Sodium capryloamphohydroxypropylsulfonate
Sodium decyl diphenyl ether sulfonate
35 Sodium dodecyldiphenyl ether sulfonate
Sodium lauryl sulfate
Sulfated castor oil
Triisocetyl citrate
Triisostearin PEG-6 esters
40 Yucca vera extract

Claims:

1. A cosmetic composition comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component randomly bonded to at least one poly(acrylic acid) component said polymer network capable of aggregation in response to a change in temperature; and
a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.
2. A cosmetic composition for topical application, comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and
a cosmetically active agent selected to treat imperfections or disorders of the skin, said carrier and said agent disposed within an aqueous-based medium.
3. The cosmetic composition of claim 1, wherein the cosmetic composition is a shampoo and the cosmetically active agent comprises a cleansing surfactant.
4. The cosmetic composition of claim 1, wherein the cosmetic composition is a moisturizer and the cosmetically active agent comprises a moisturizer.
5. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunscreen and the cosmetically active agent comprises a UV-absorbing agent.
6. The cosmetic composition of claim 1, wherein the cosmetic composition is an acne cream and the cosmetically active agent comprises an antiacne agent.

7. The cosmetic composition of claim 1, wherein the cosmetic composition is a hair straightener and the cosmetic agent comprises a base for increasing the pH.

5 8. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunless tanning lotion and the cosmetically active agent comprises skin tinting agent.

9. The cosmetic composition of claim 1, wherein the cosmetic composition is an antiperspirant and the cosmetically active agent comprises aluminum
10 chlorhydrate.

10. The cosmetic composition of claim 1, wherein the cosmetic composition is a shaving cream and the cosmetically active agent comprises an emollient and a foaming surfactant.

15

11. The cosmetic composition of claim 1, wherein the cosmetic composition is a face cosmetic and the cosmetically active agent comprises a pigment.

12. The cosmetic composition of claim 1 or 2, wherein the cosmetic agent
20 comprises a hydrophobic material, wherein the cosmetically acceptable carrier stabilizes the hydrophobic material in the aqueous medium.

13. The cosmetic composition of claim 2, wherein said cosmetic agent selected to treat imperfections or disorders of the skin is selected from the group
25 consisting of acidulents, antiacne agents, anti-aging agents, anti-inflammatories, anti-irritants, antioxidants, depilatories, detergents, disinfectants, emollients, exfoliants, humectants, lubricants, moisturizers, skin conditioners, skin protectants, skin lightening agents, skin soothing agents, sunscreens, and tanning accelerators and mixtures thereof.

30

14. The composition of claim 4, wherein said composition further comprises a cosmetic agent selected from the group consisting of humectants and emollients.

15. The composition of claim 1 or 2, further comprising one or more additives selected from the group consisting of preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, astringents, antiperspirants, antiseptics, antistatic agents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents, conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators, thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances.

16. The composition of claim 1, wherein the cosmetic composition takes a form selected from the group consisting of lotions, creams, sticks, roll-on formulations, mousses, sprays, aerosols, pad-applied formulations and masks.

17. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 27-40°C.

18. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 30 to 37°C.

19. The composition of claim 1, wherein said composition is formulated as a product selected from the group consisting of baby products, baby shampoos, lotions, powders and creams; bath preparations, bath oils, tablets and salts, bubble baths, bath fragrances, bath capsules; eye makeup preparations, eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover, mascara; fragrance preparations, colognes, toilet waters, powders and sachets; noncoloring hair preparations, hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations, hair dye, hair tints, hair color sprays, hair lighteners and hair bleaches; makeup preparations, face powders, foundations, leg and body paints, lipstick; makeup bases, rouges and makeup fixatives; manicuring preparations, basecoats, undercoats, cuticle softeners, nail creams, nail extenders, nail polish and enamel, and remover, oral hygiene products, dentrifices, mouthwashes; personal cleanliness, bath soaps, detergents, deodorants, douches and feminine hygiene products; shaving preparations, aftershave lotion, beard softeners, men's talcum shaving cream, shaving soap, preshave lotions; skin care preparations, skin cleansing preparations, skin antiseptics, depilatories, face and neck cleansers, body and hand cleansers, foot powders; moisturizers, night preparations, paste masks, skin fresheners; and suntan preparations, suntan creams, gels and lotions, and indoor tanning preparations.

20

20. The cosmetic composition of claim 1 or 2, wherein the poloxamer component is present in an amount in the range of about 0.01 to 20 wt% and the poly(acrylic acid) component is present in the amount of about 0.01 to 20 wt%.

25

21. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamers.

30

22. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamer components randomly bonded to a poly(acrylic acid) backbone.

23. The cosmetic composition of claim 1, wherein the reversibly
viscosifying polymer composition comprises a plurality of poly(acrylic acid)
components randomly bonded to a poloxamer component.

5 24. The cosmetic composition of claim 1, wherein the aqueous-based
medium is selected from the group consisting of water, salt solutions and water with
water-miscible organic compound(s).

10 25. The cosmetic compositions of claim 1, further comprising an additive
selected to increase transition temperature and increase viscosity of the reversible
viscosifying polymer network.

15 26. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature and decrease viscosity of the reversible
viscosifying polymer network.

20 27. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature without affecting viscosity of the reversible
viscosifying polymer network.

 28. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and increase viscosity of the reversible
viscosifying polymer network.

25 29. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and decrease viscosity of the reversible
viscosifying polymer network.

30. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature without affecting viscosity of the reversible viscosifying polymer network.

5 31. The cosmetic composition of claim 1, further comprising an additive selected to increase viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

10 32. The cosmetic composition of claim 1, further comprising an additive selected to decrease viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

15 33. The cosmetic composition of claim 1 or 2, characterized in that the gel remains translucent to light before and after response to the environmental stimulus.

34. The cosmetic composition of claim 1, wherein the poly(acrylic acid) is branched.

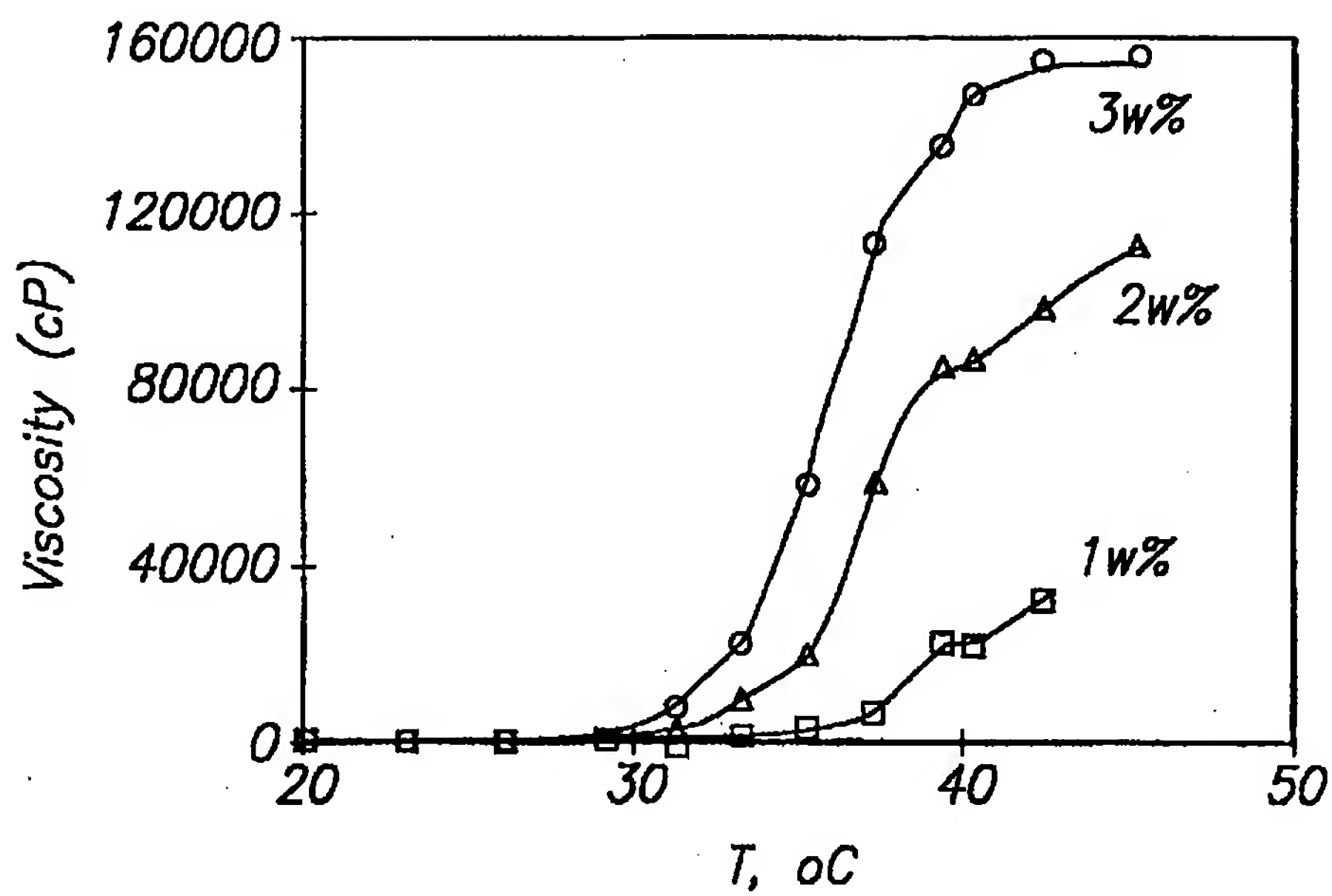
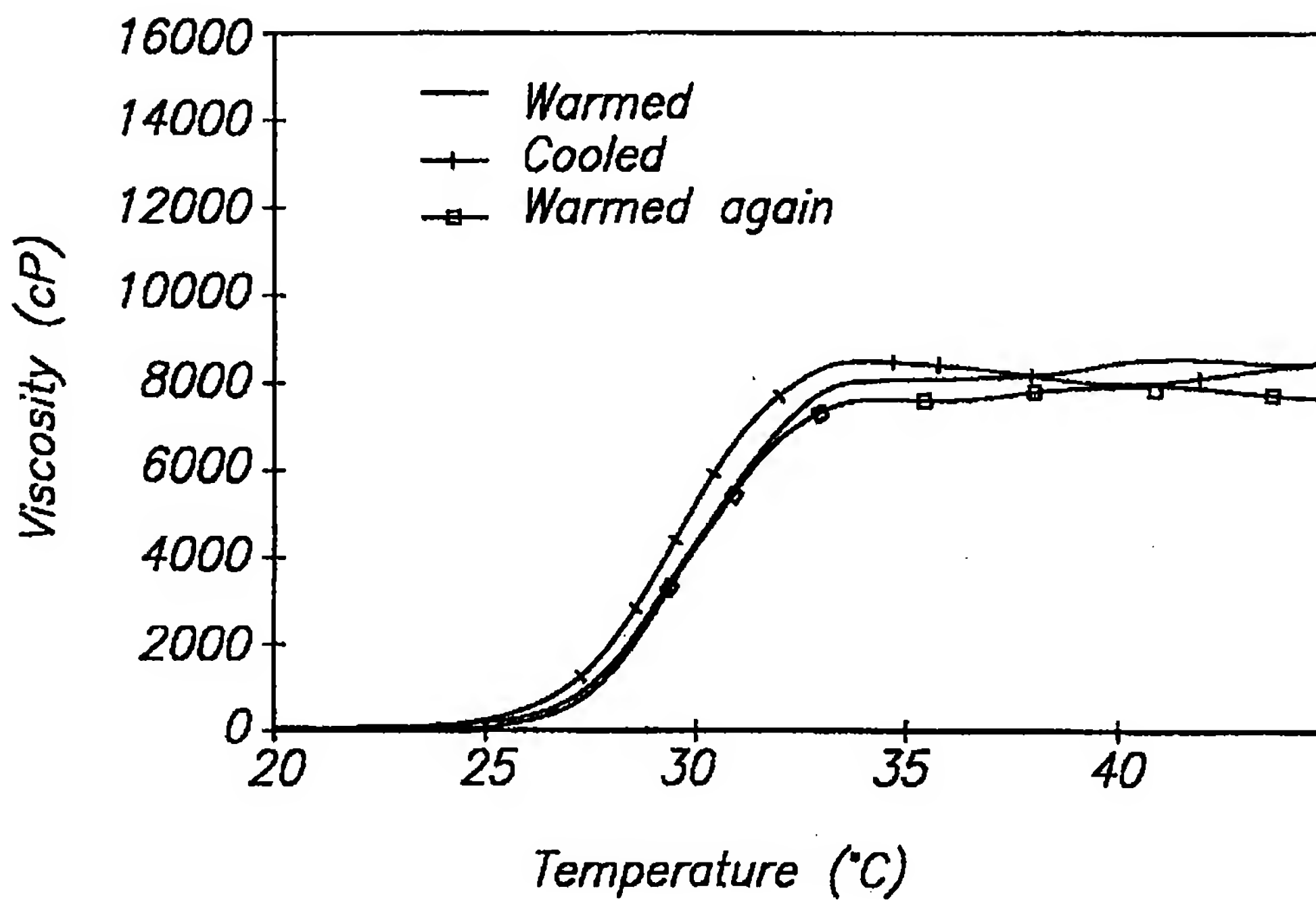
20 35. Method of making a cosmetic composition, comprising:
dissolving a poloxamer capable of aggregation in response to a change in temperature in acrylic acid monomer;
initiating polymerization of the monomer to form a poly(acrylic acid) randomly bonded to the poloxamer, so as to form a reversibly viscosifying polymer composition;
mixing the reversibly gelling polymer compositions with a cosmetic agent which
25 imparts a desired cosmetic effect to the composition.

36. The method of claim 36, wherein a polymerization initiator is selected to provide the polymer network having a selected temperature of viscosification.

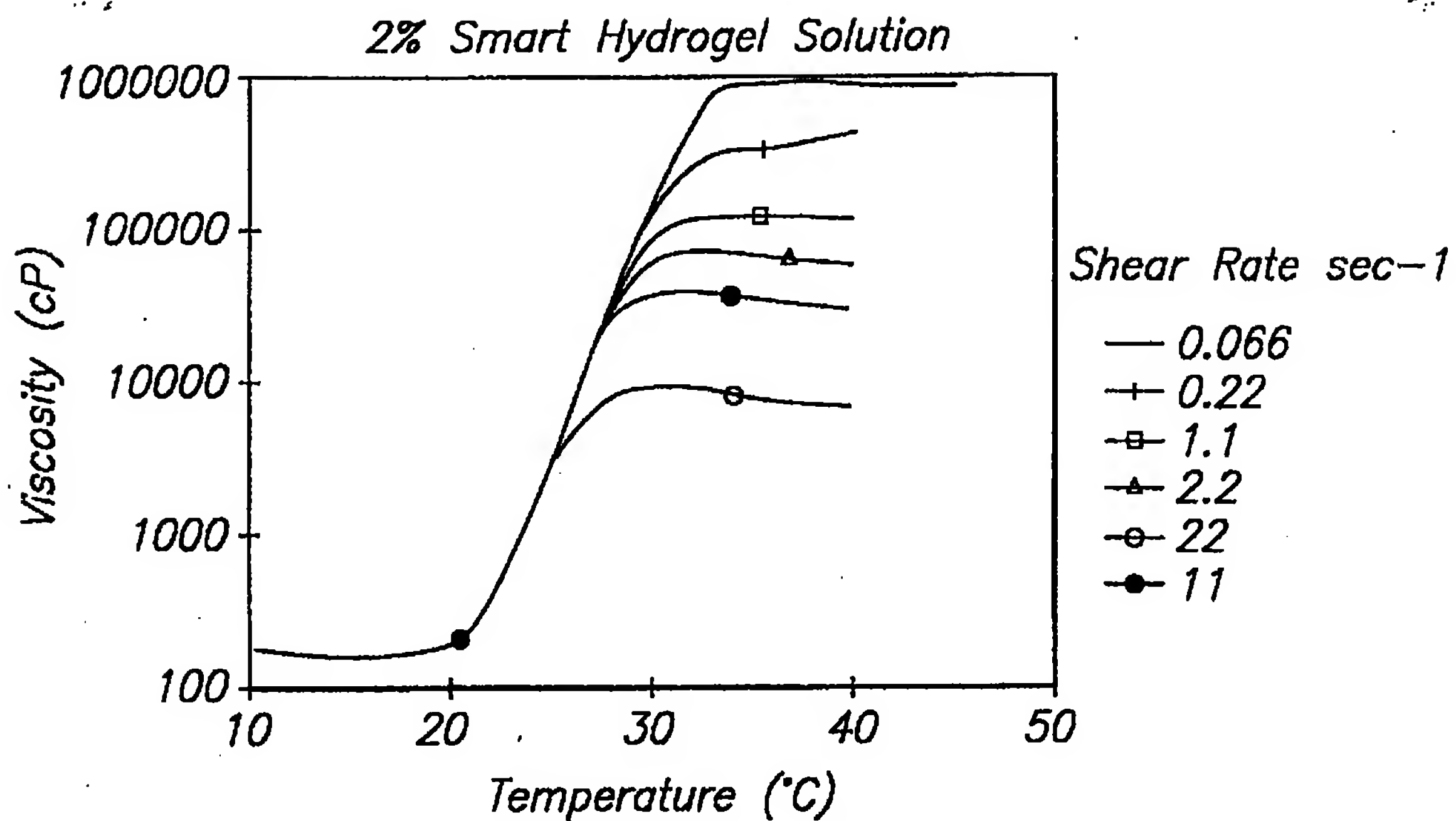
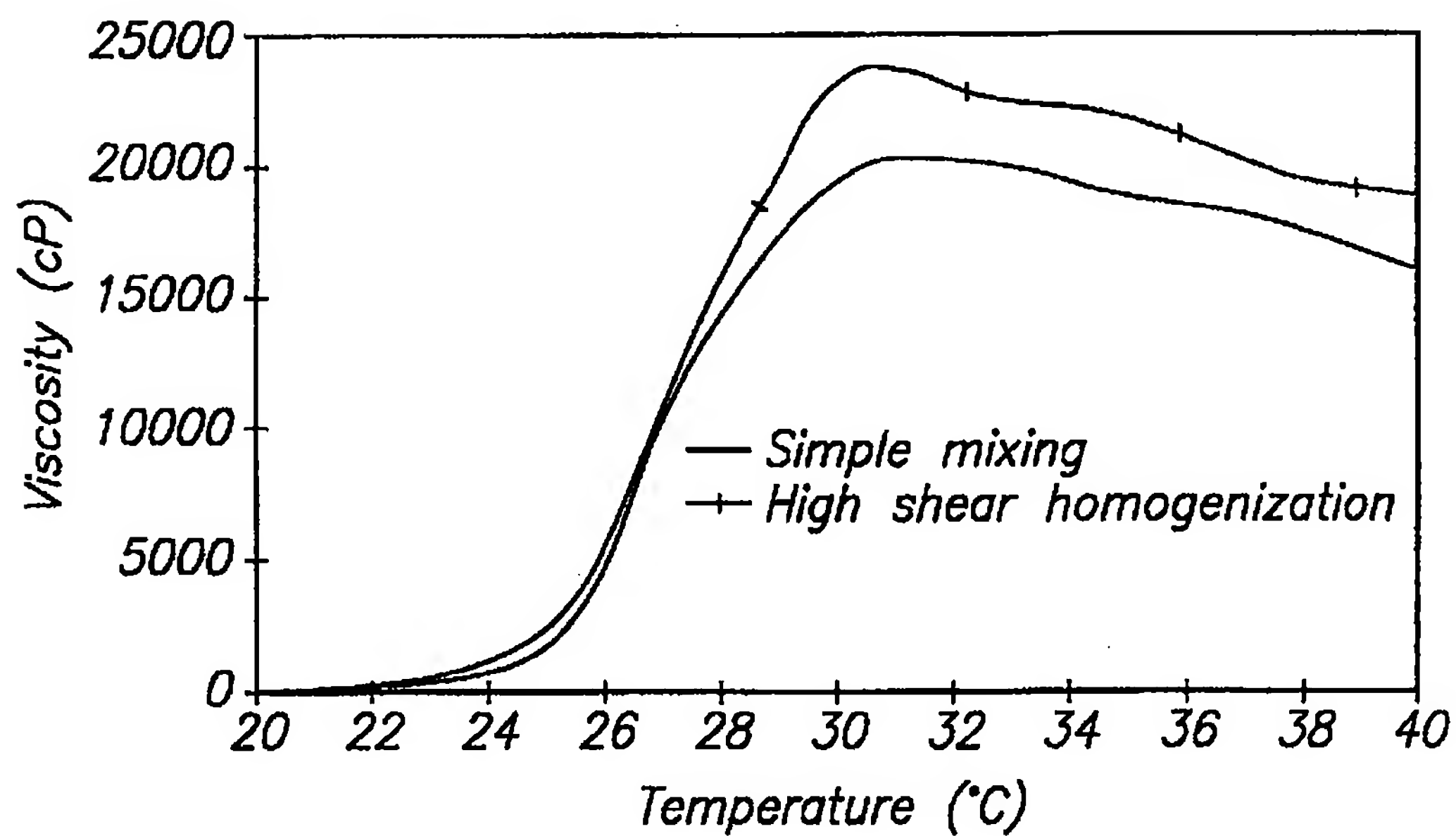
30 37. The method of claim 36, wherein one or more poloxamers are added.

38. The cosmetic composition of claim 1, wherein the reversibly
viscosifying polymer network is present in an amount in the range of 0.01% - 10%.

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**FIG. 1****FIG. 2**

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**FIG. 3****FIG. 4**

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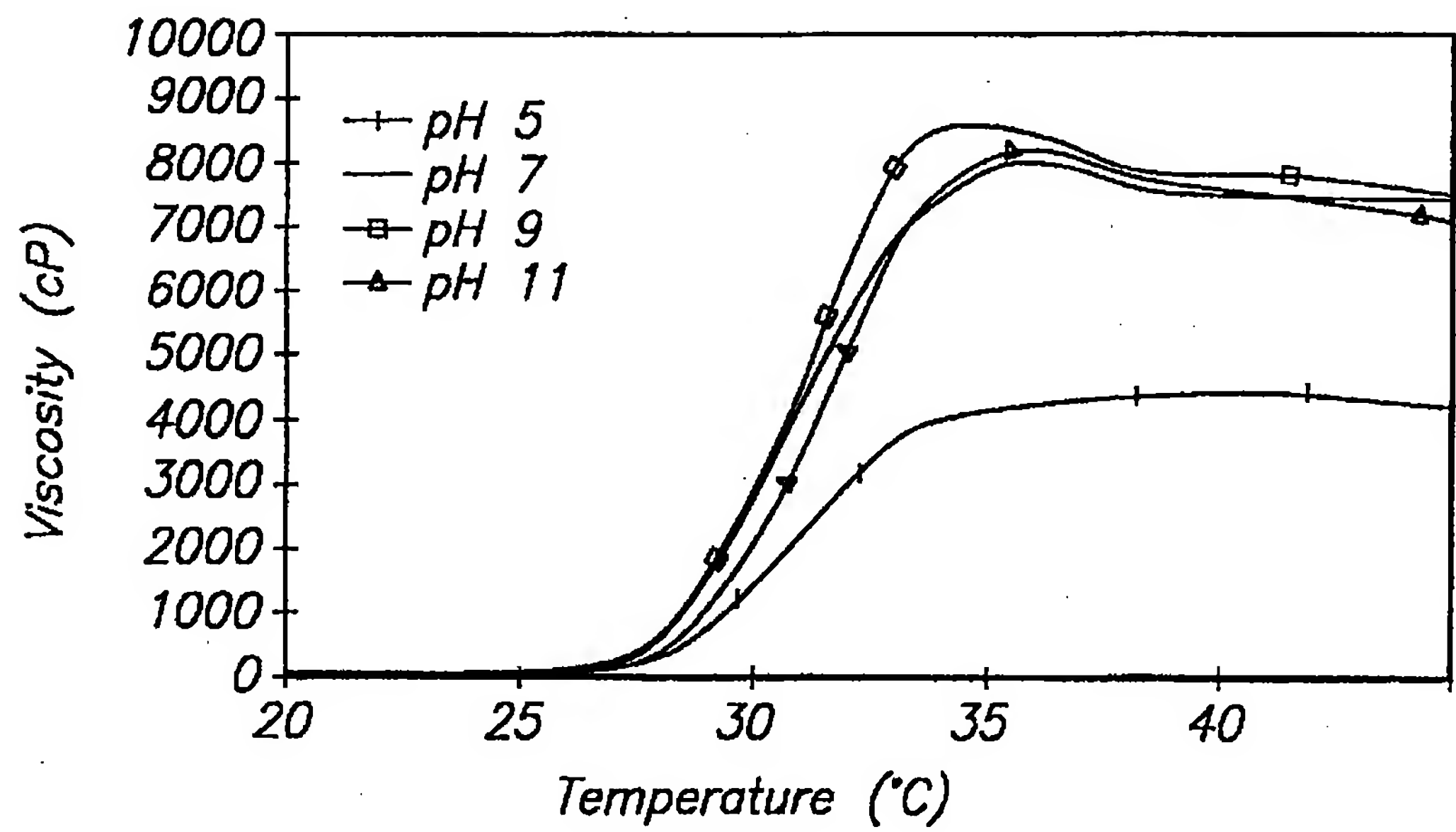


FIG. 5

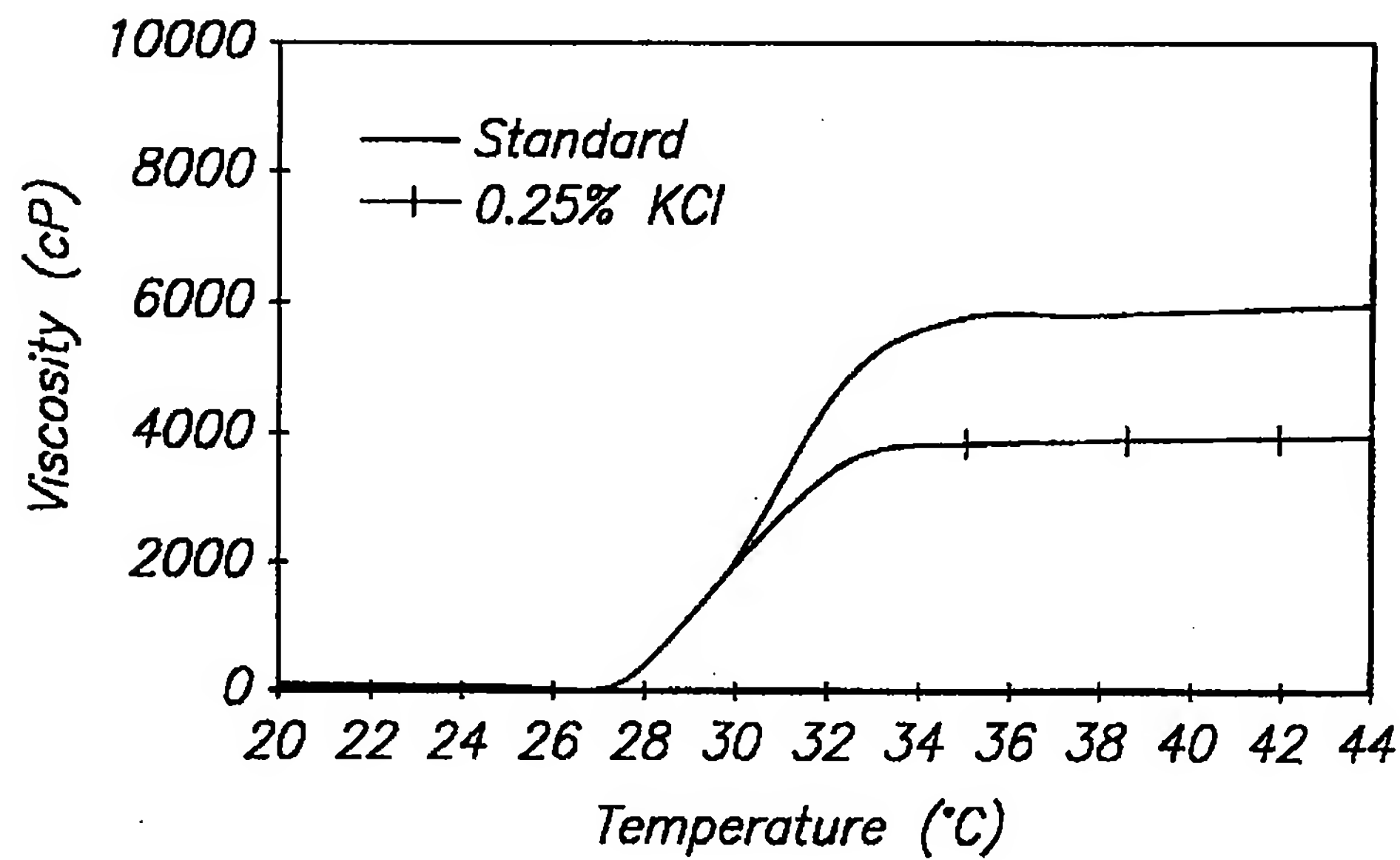
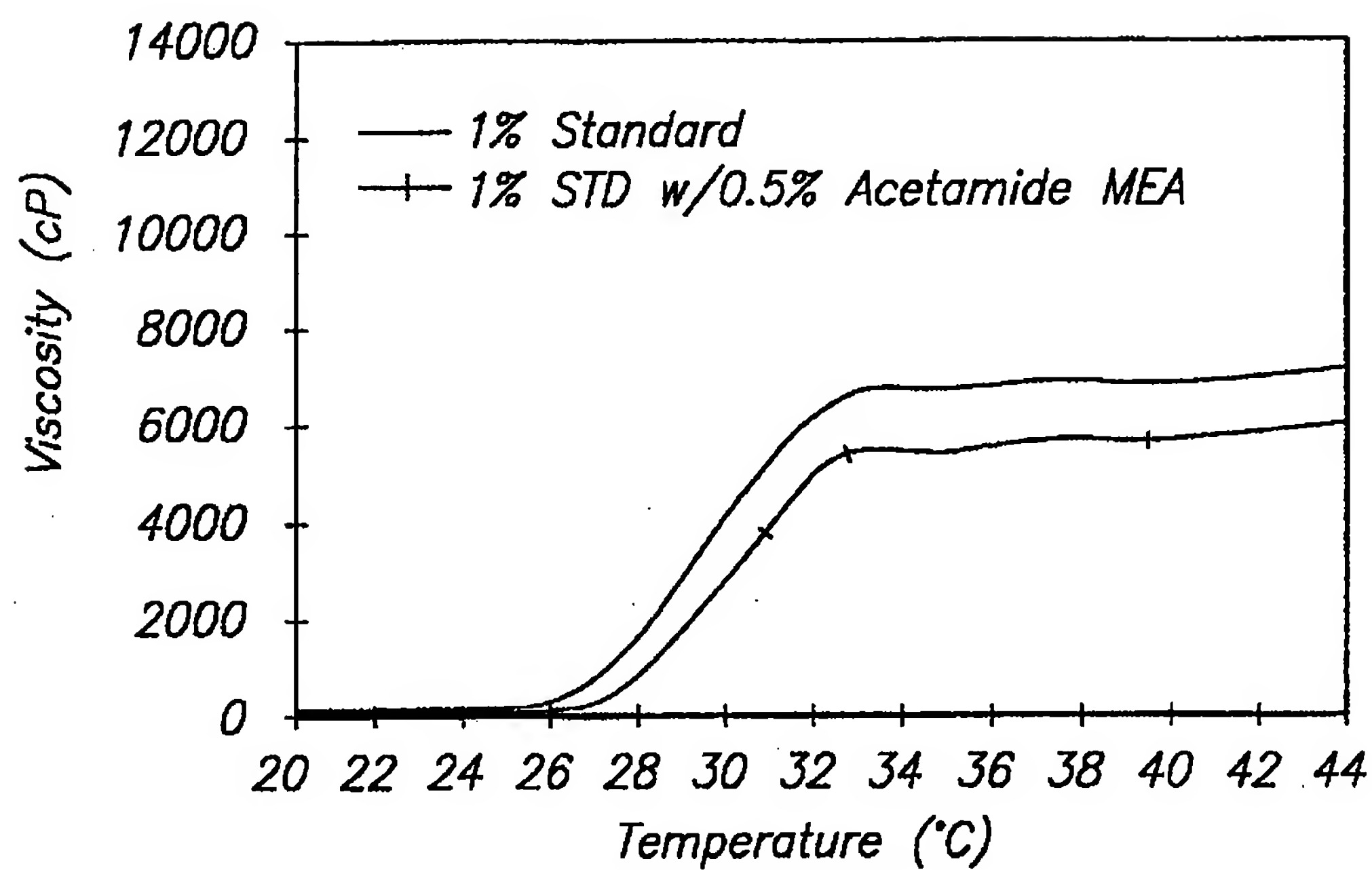
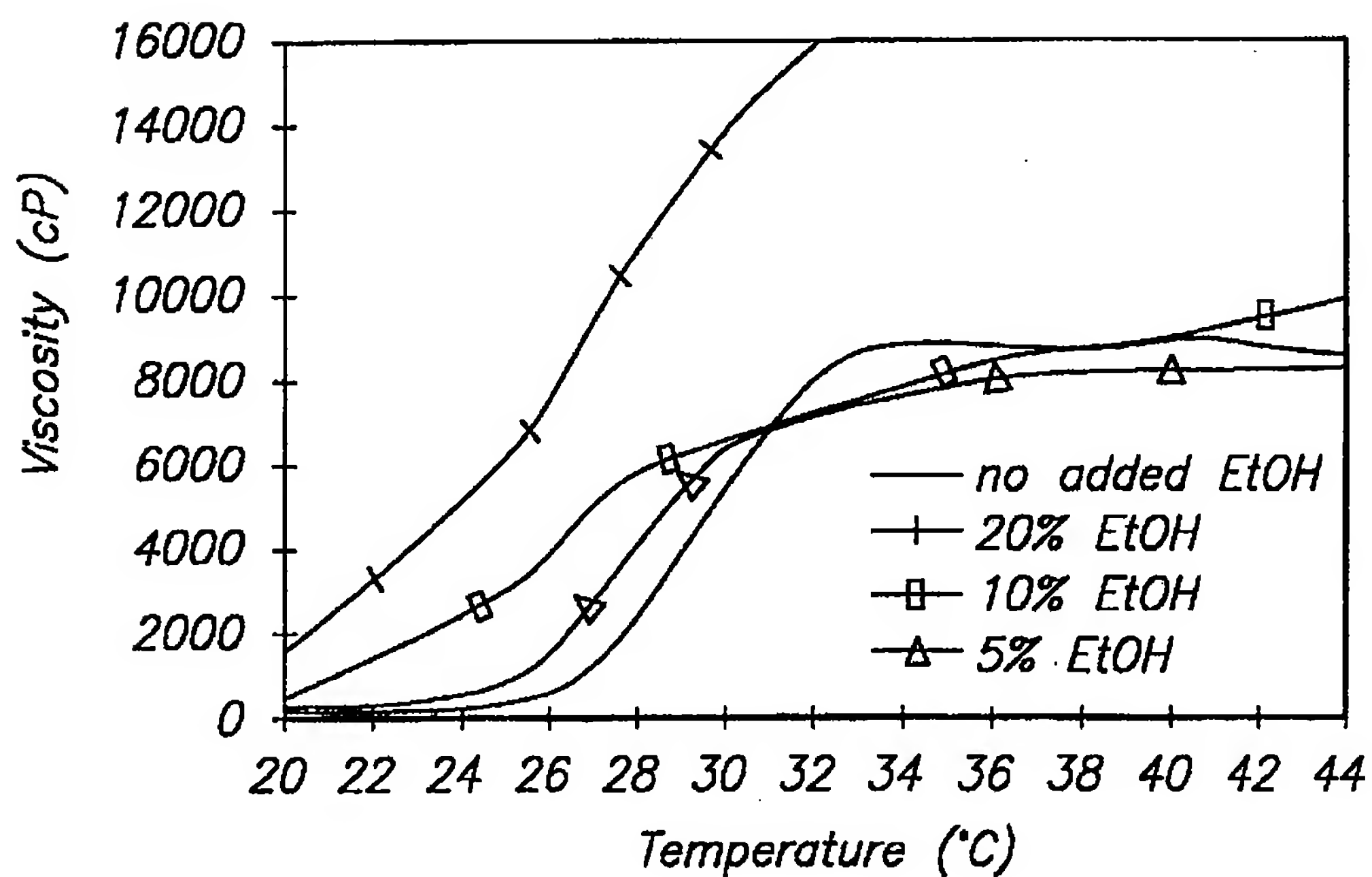
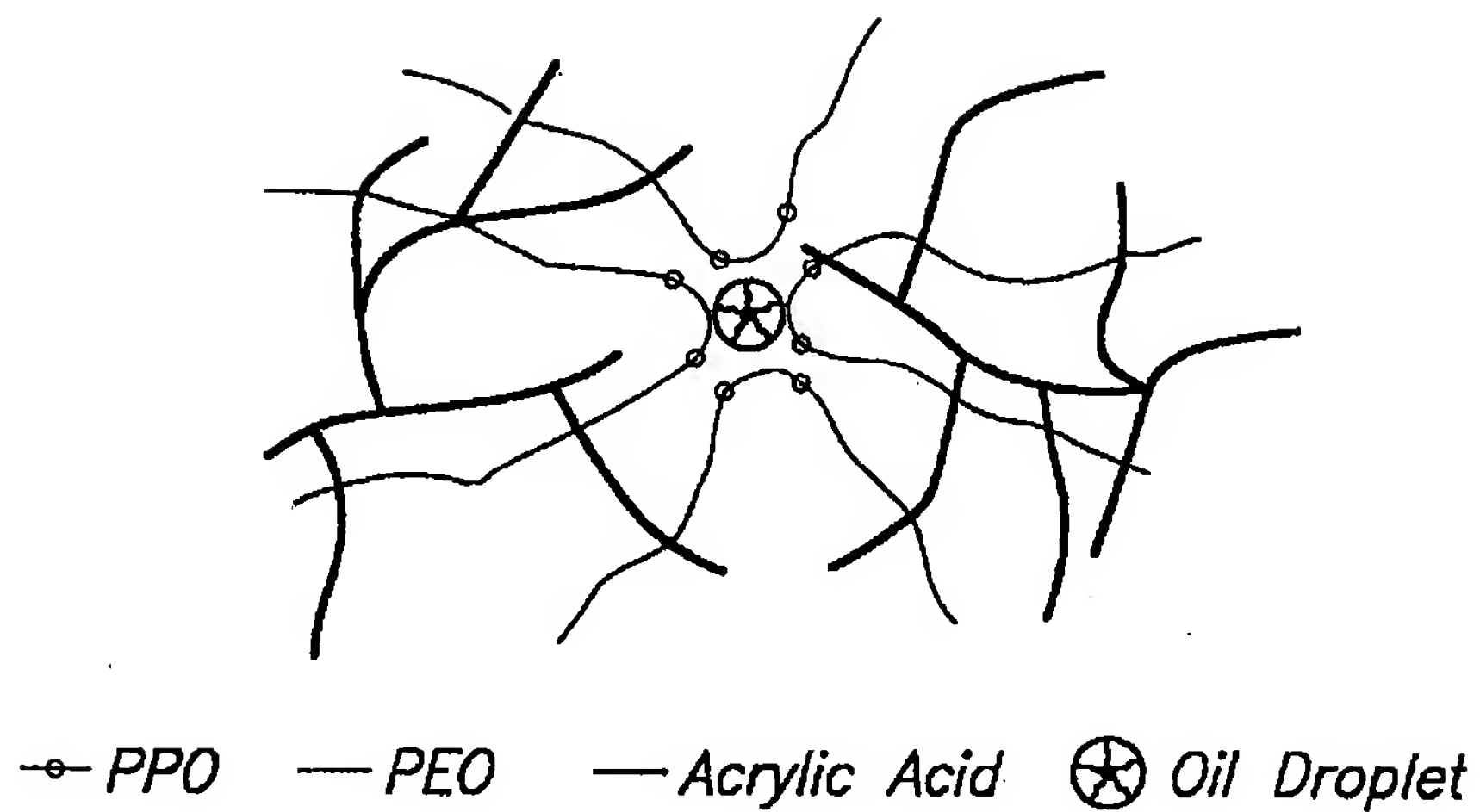
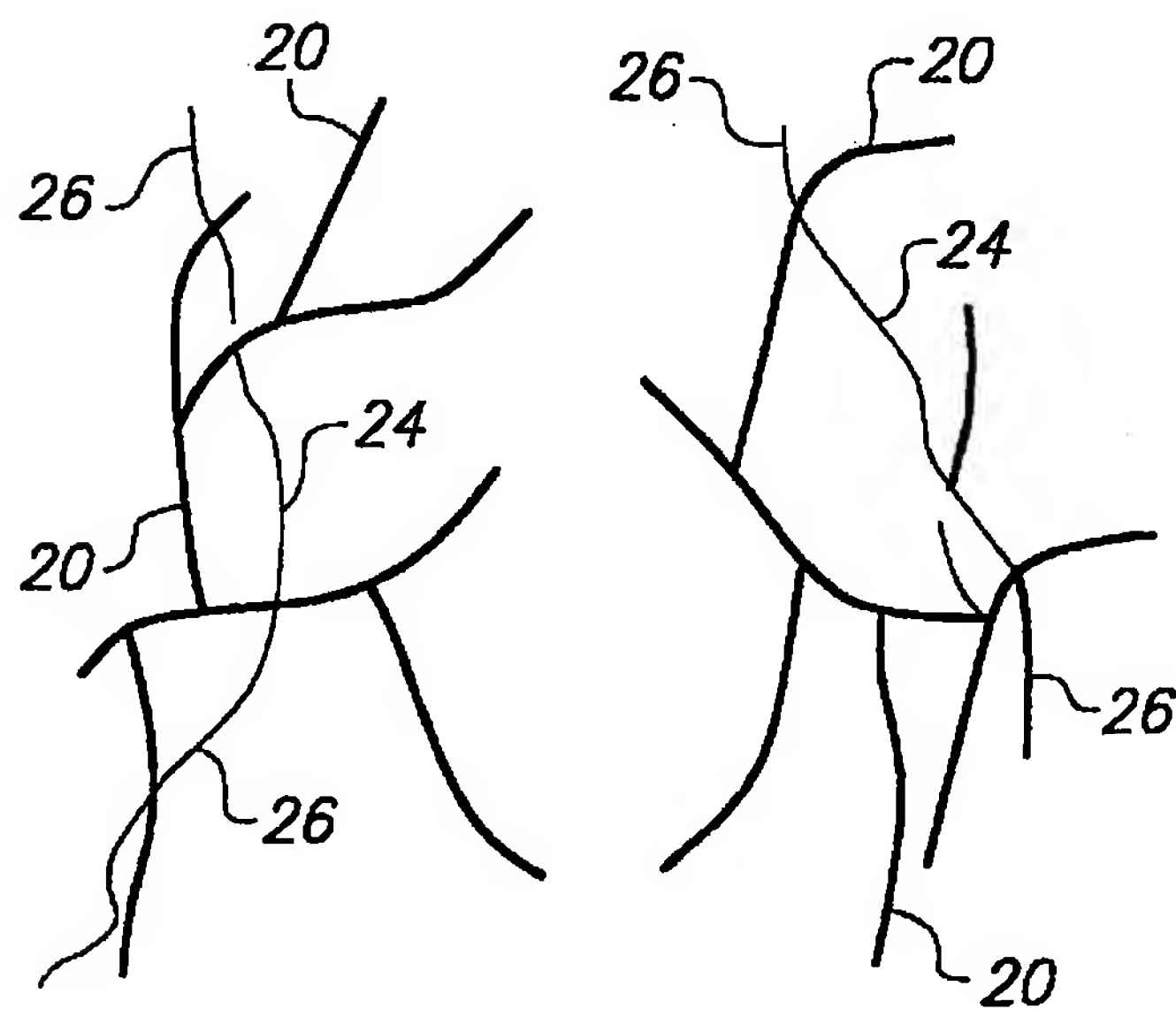


FIG. 6

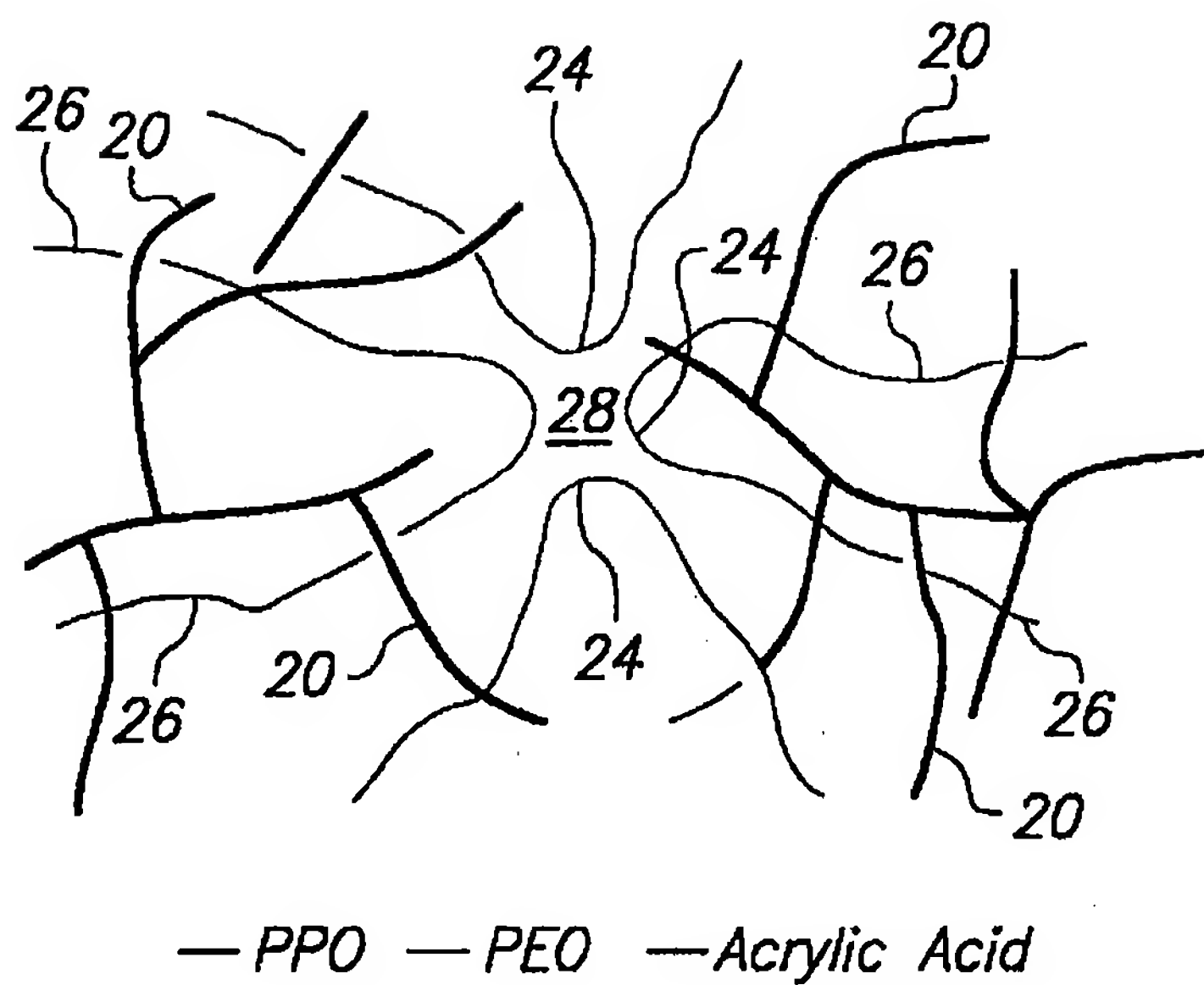
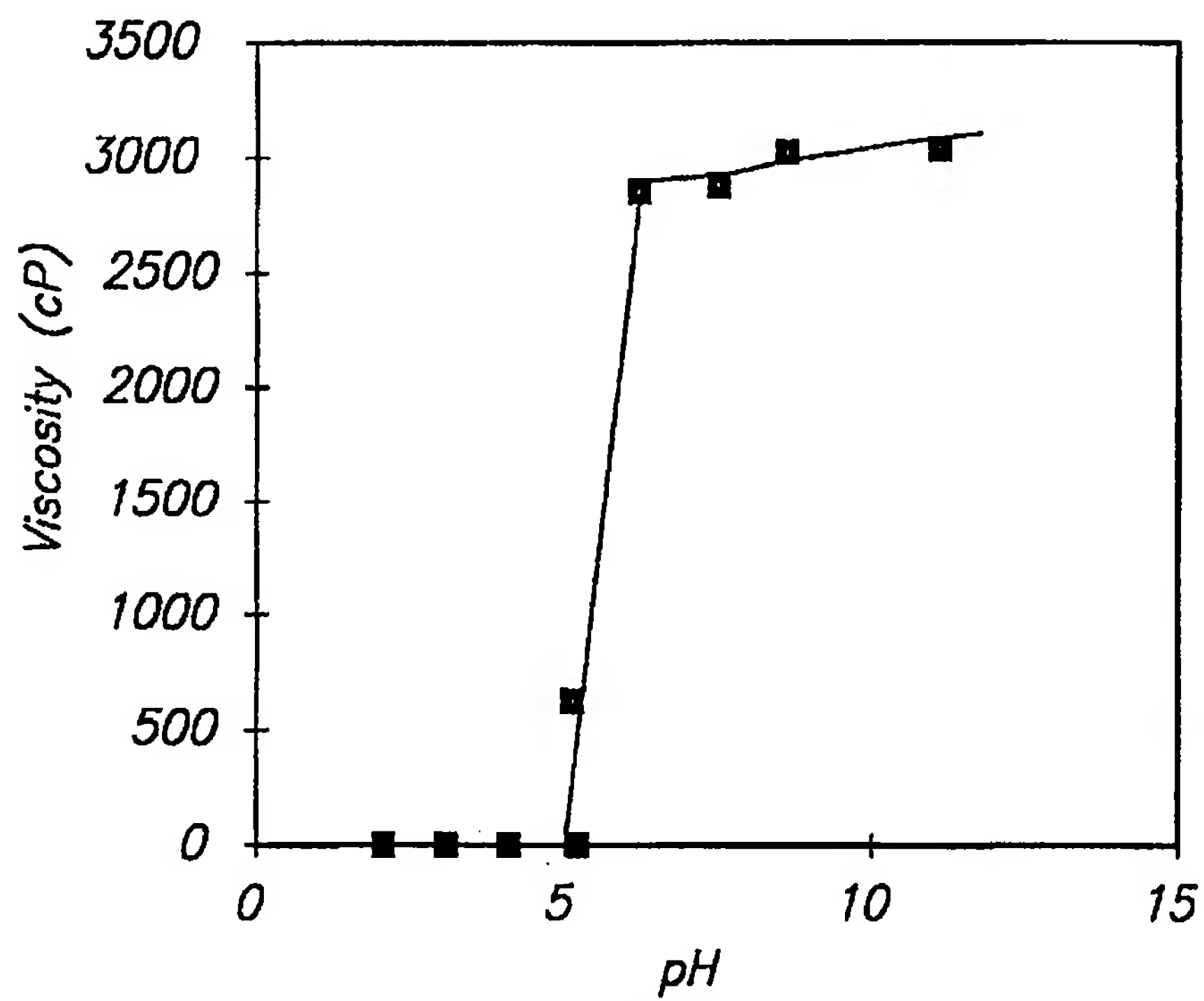
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**FIG. 7****FIG. 8**

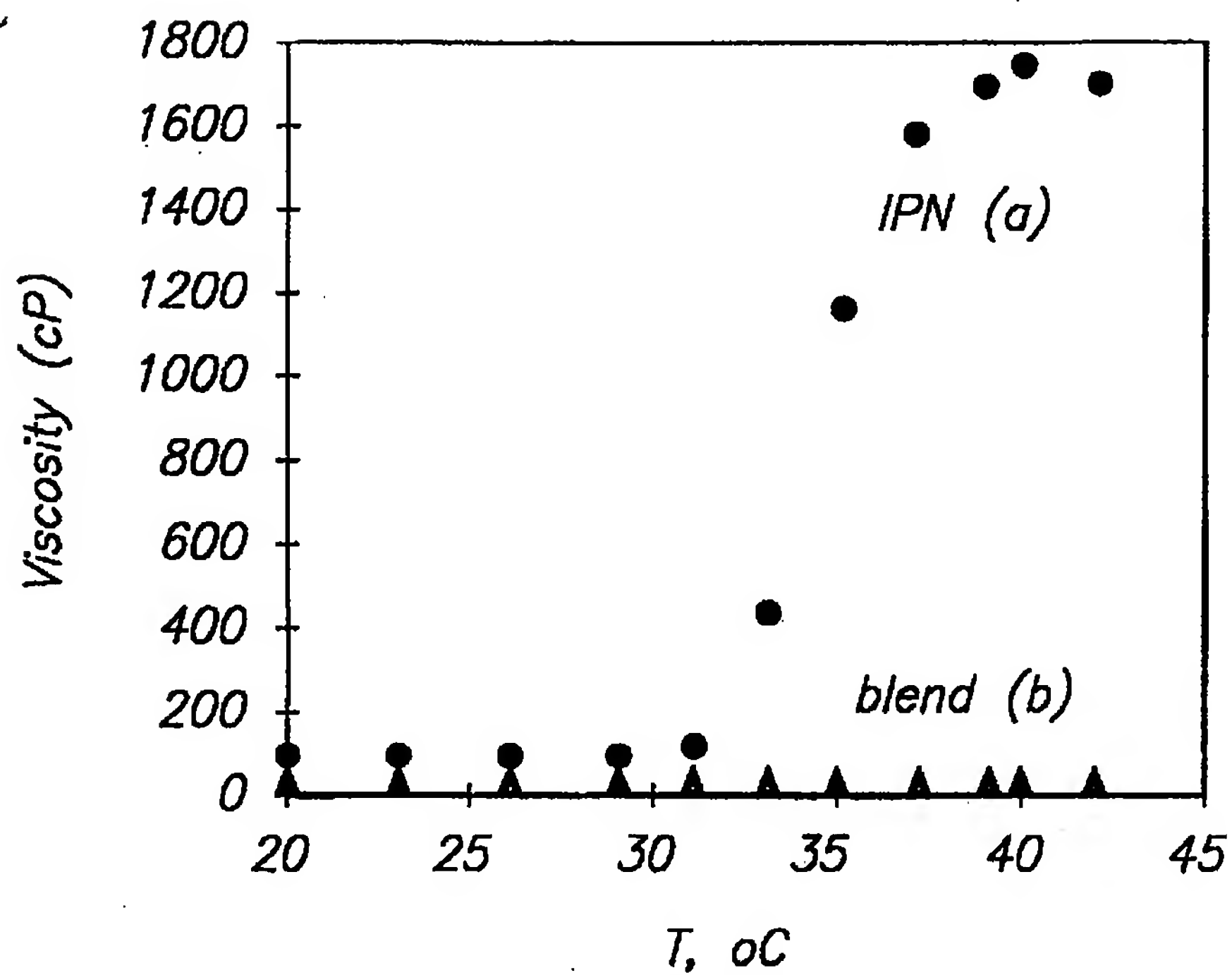
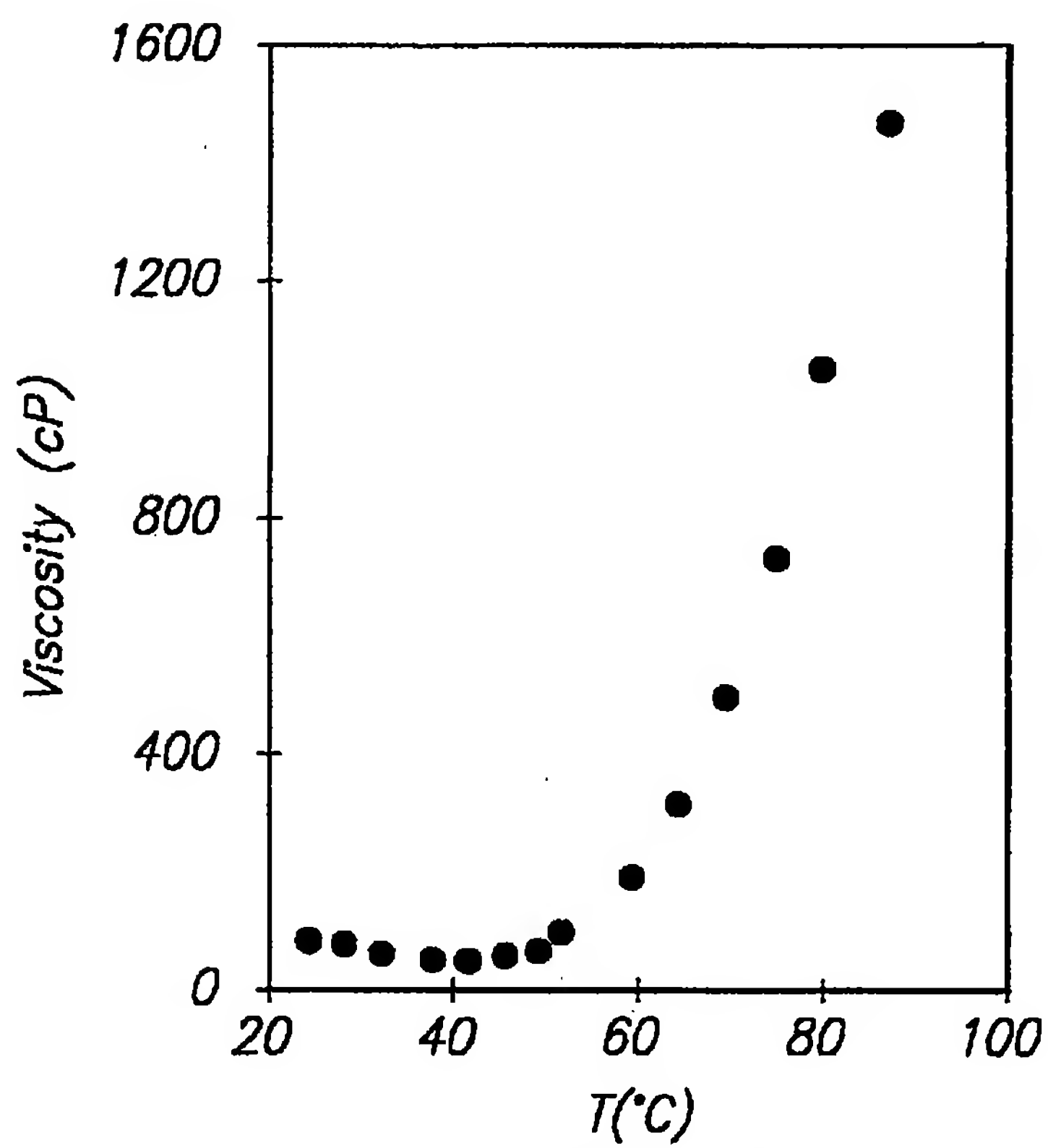
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**FIG. 9****FIG. 10A**

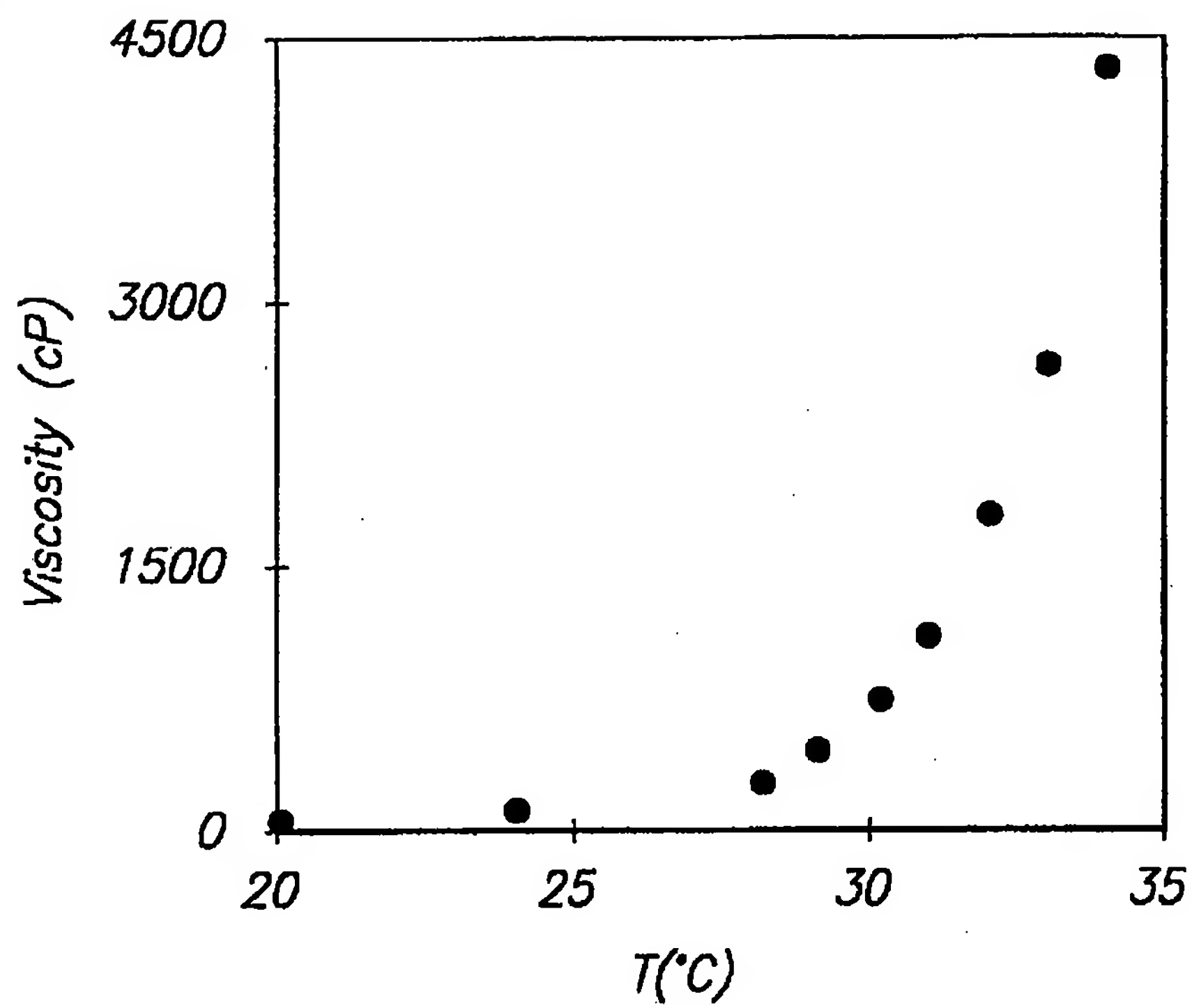
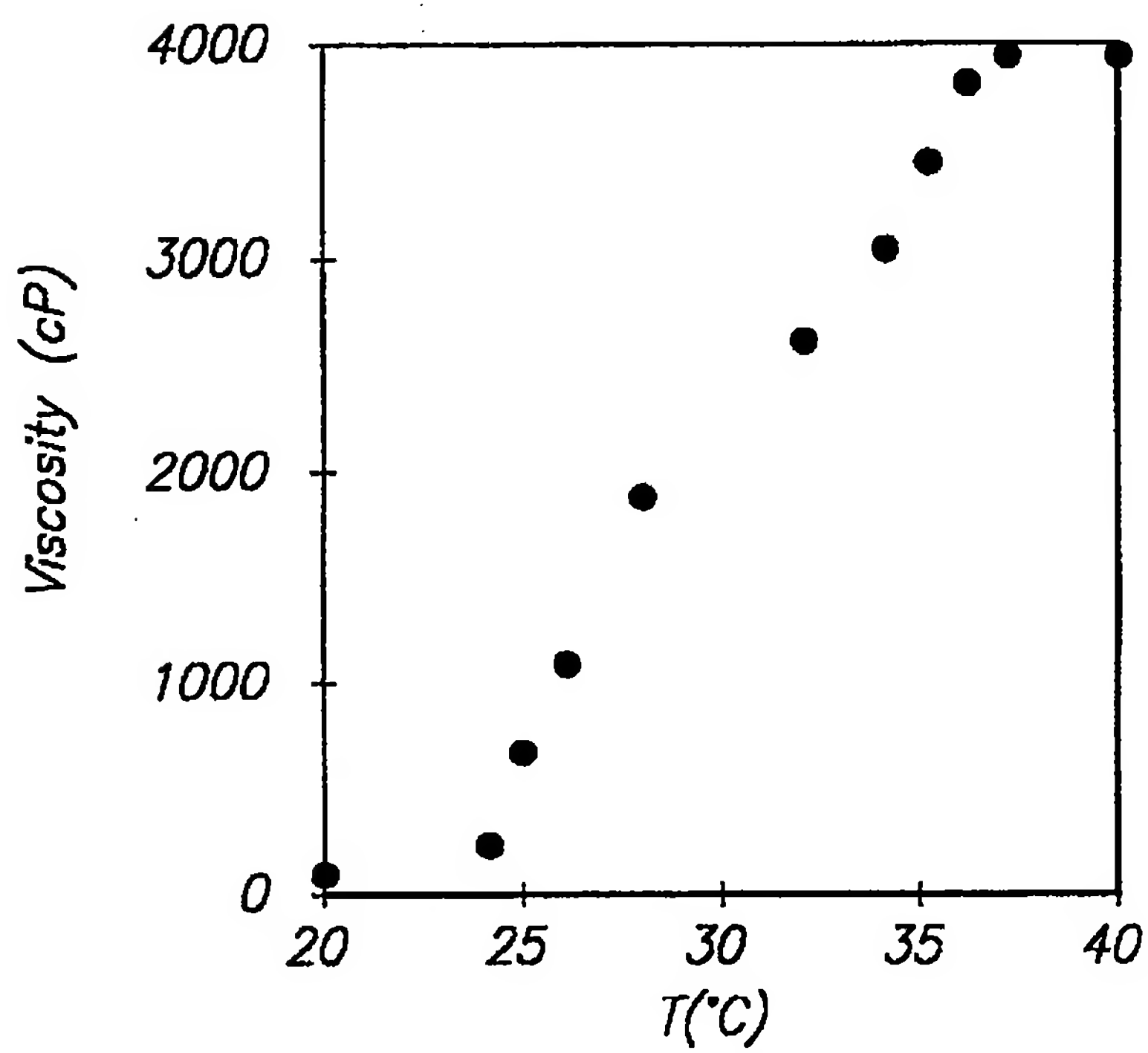
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**FIG. 10B****FIG. 11**

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**FIG. 12****FIG. 13**

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**FIG. 14****FIG. 15**

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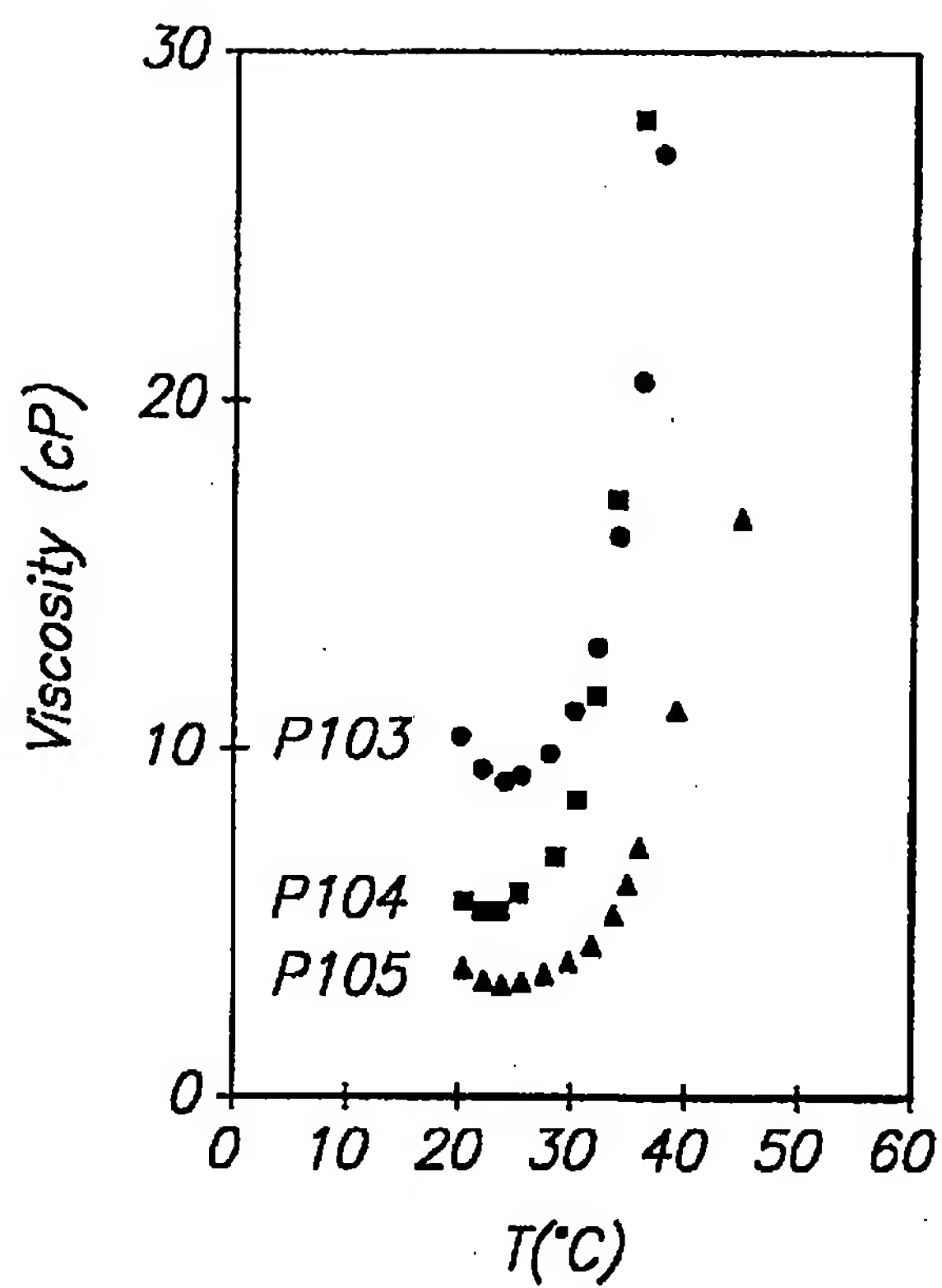


FIG. 16

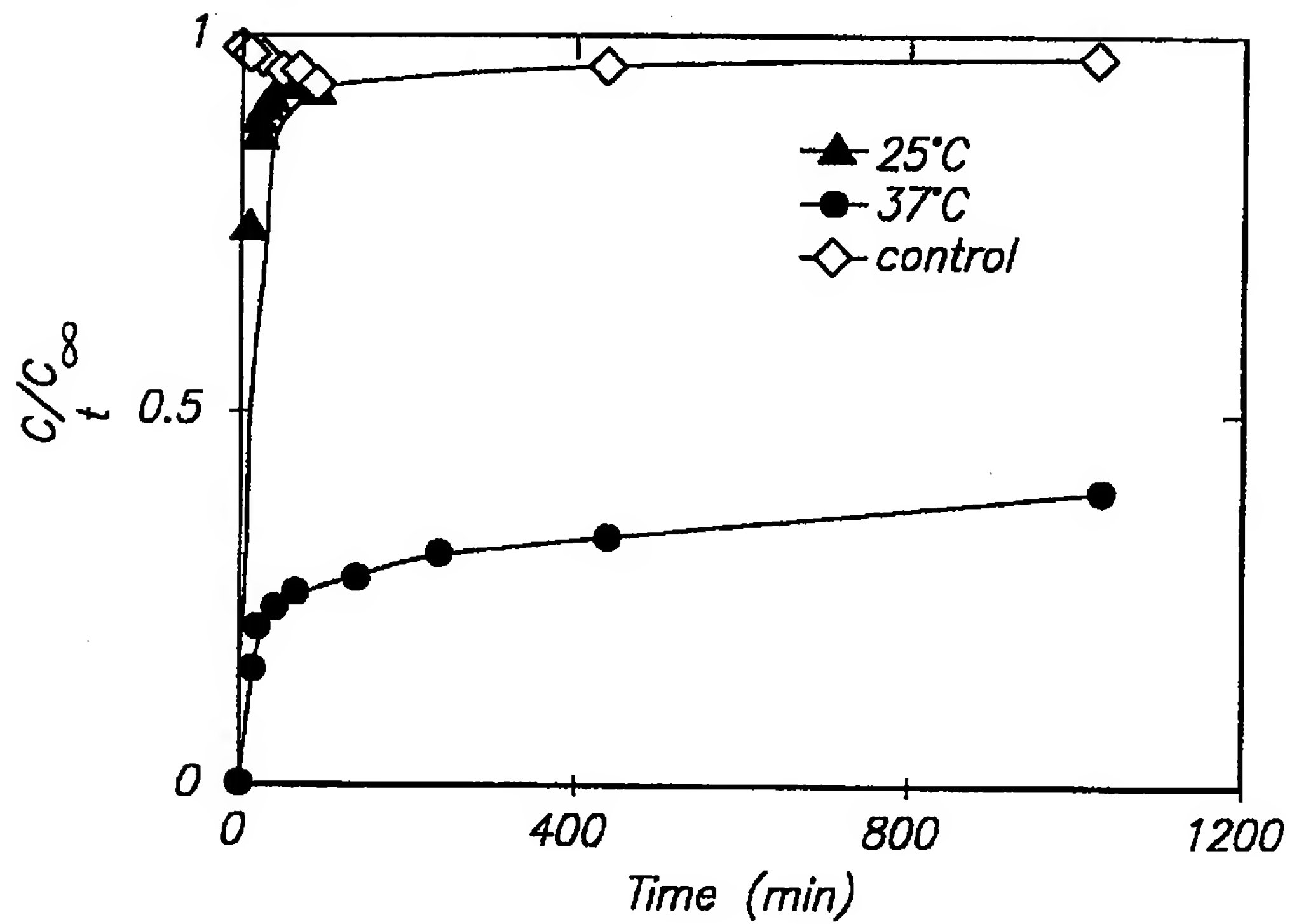
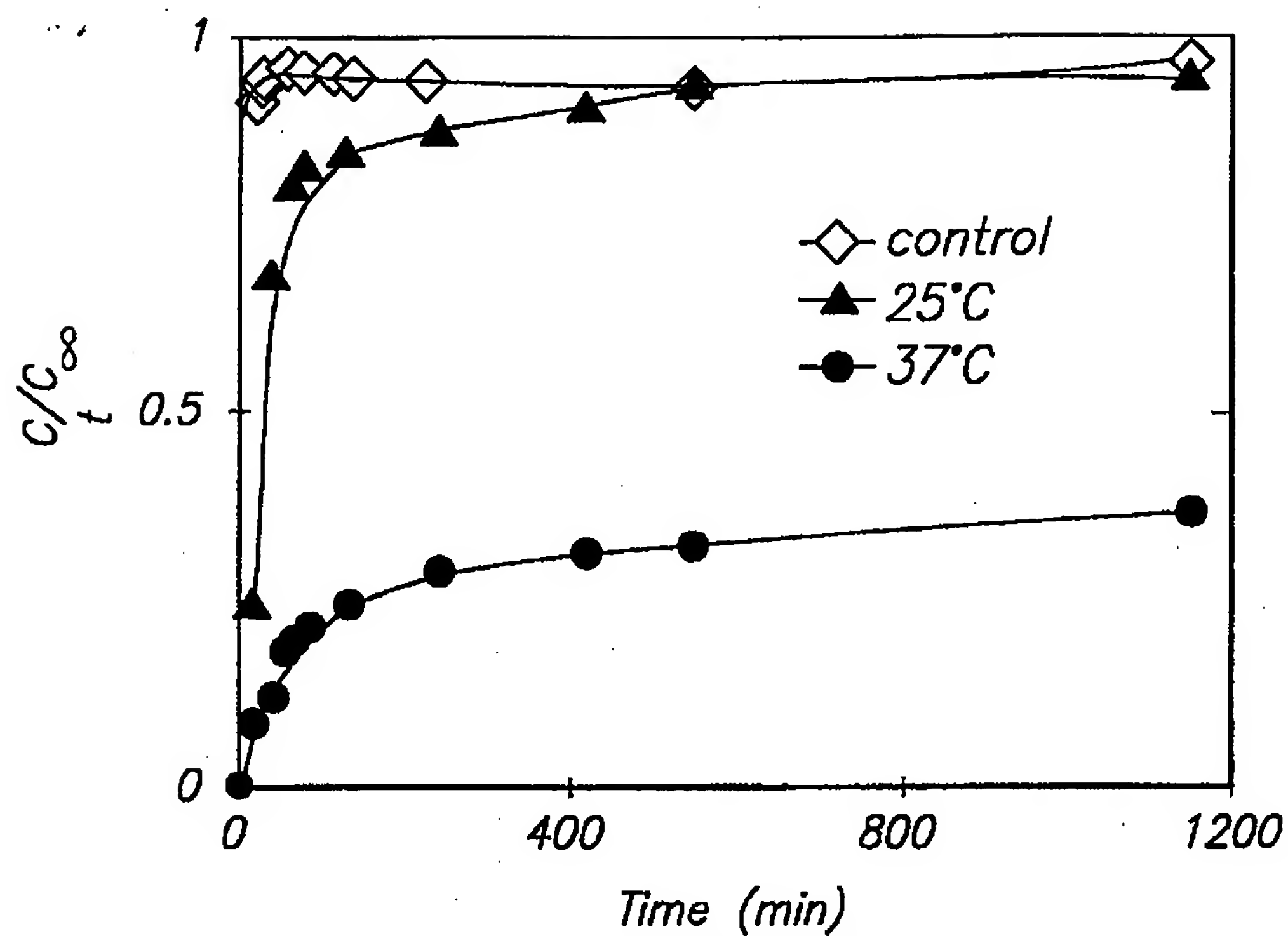
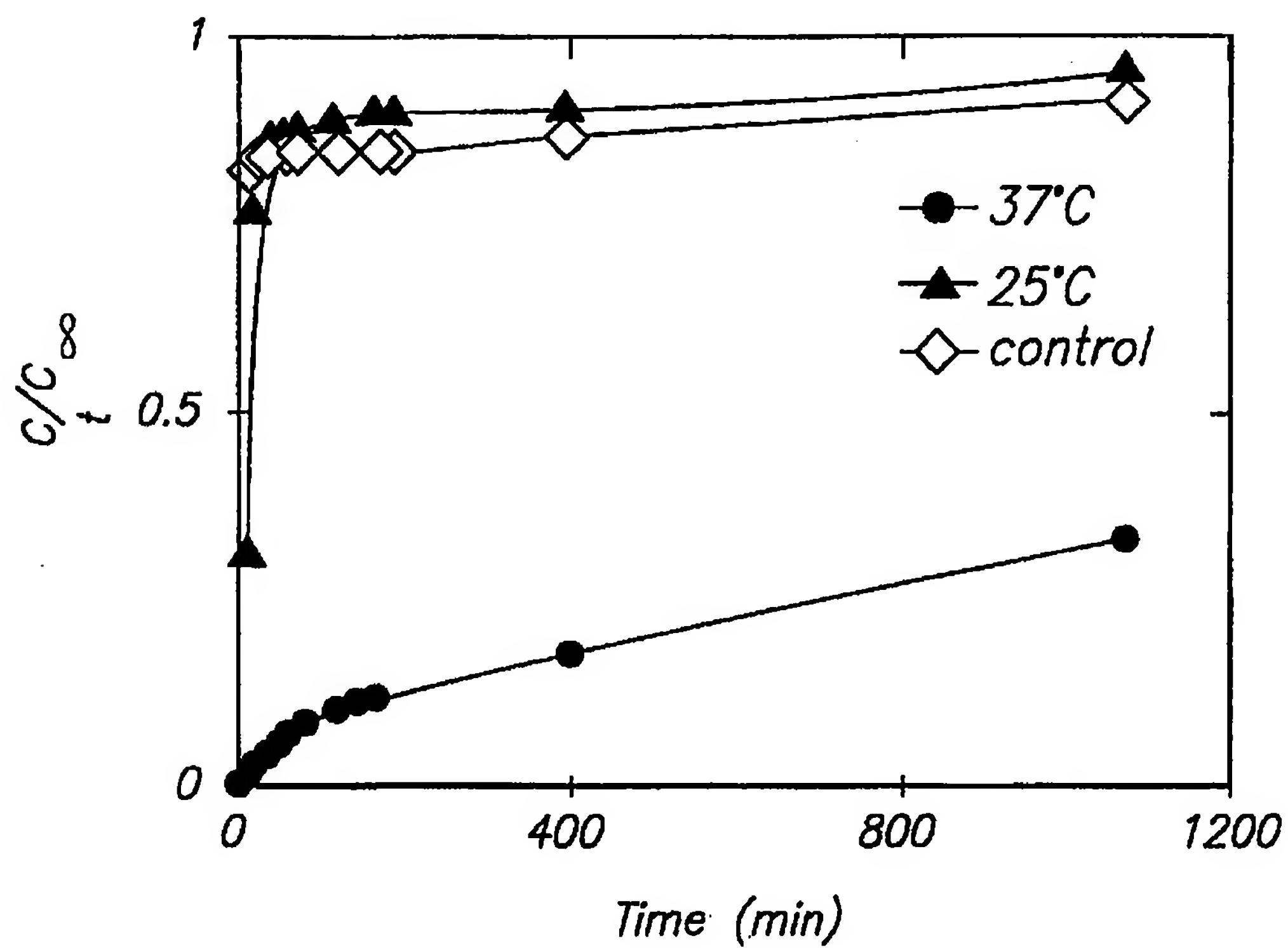
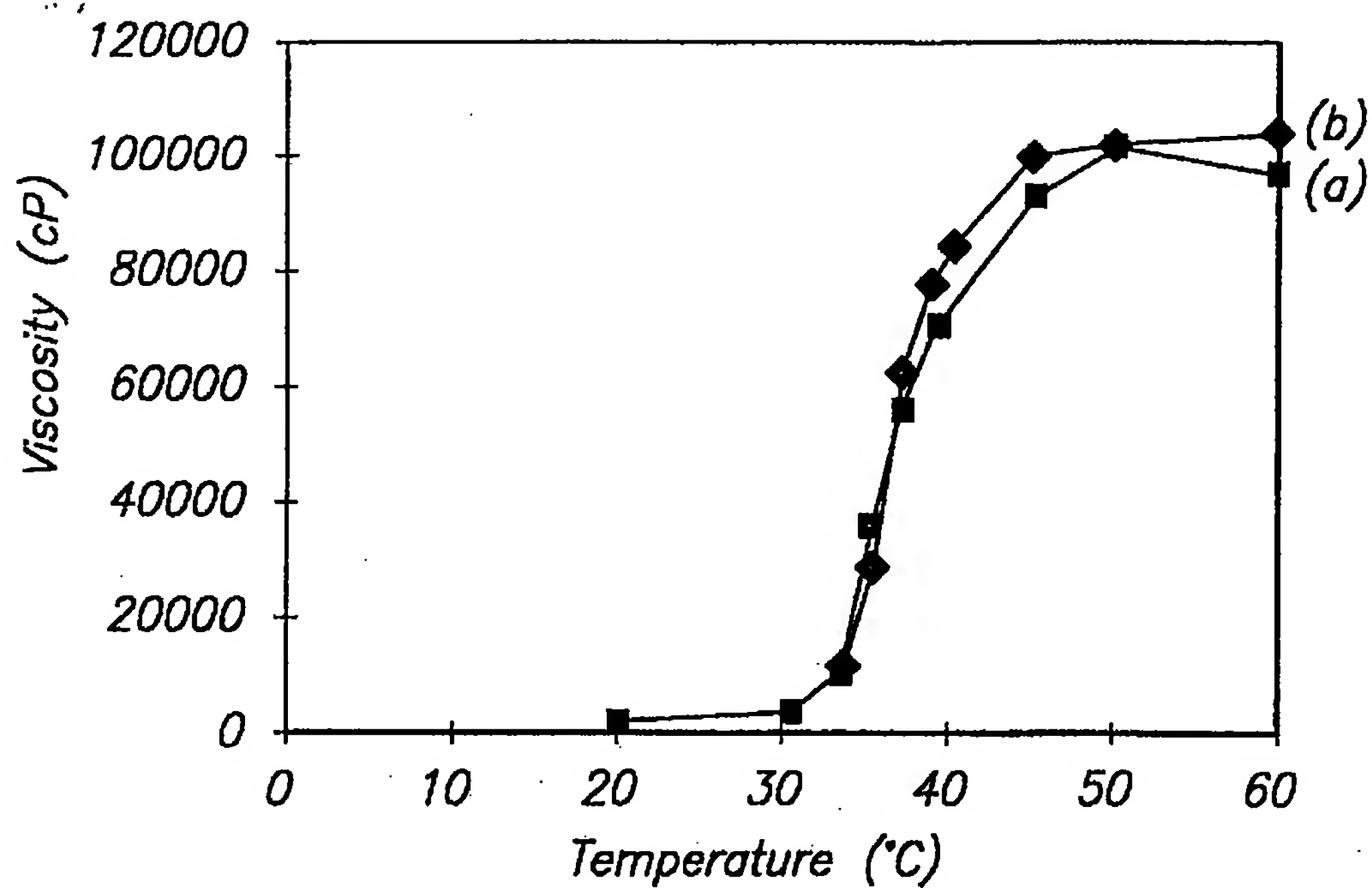
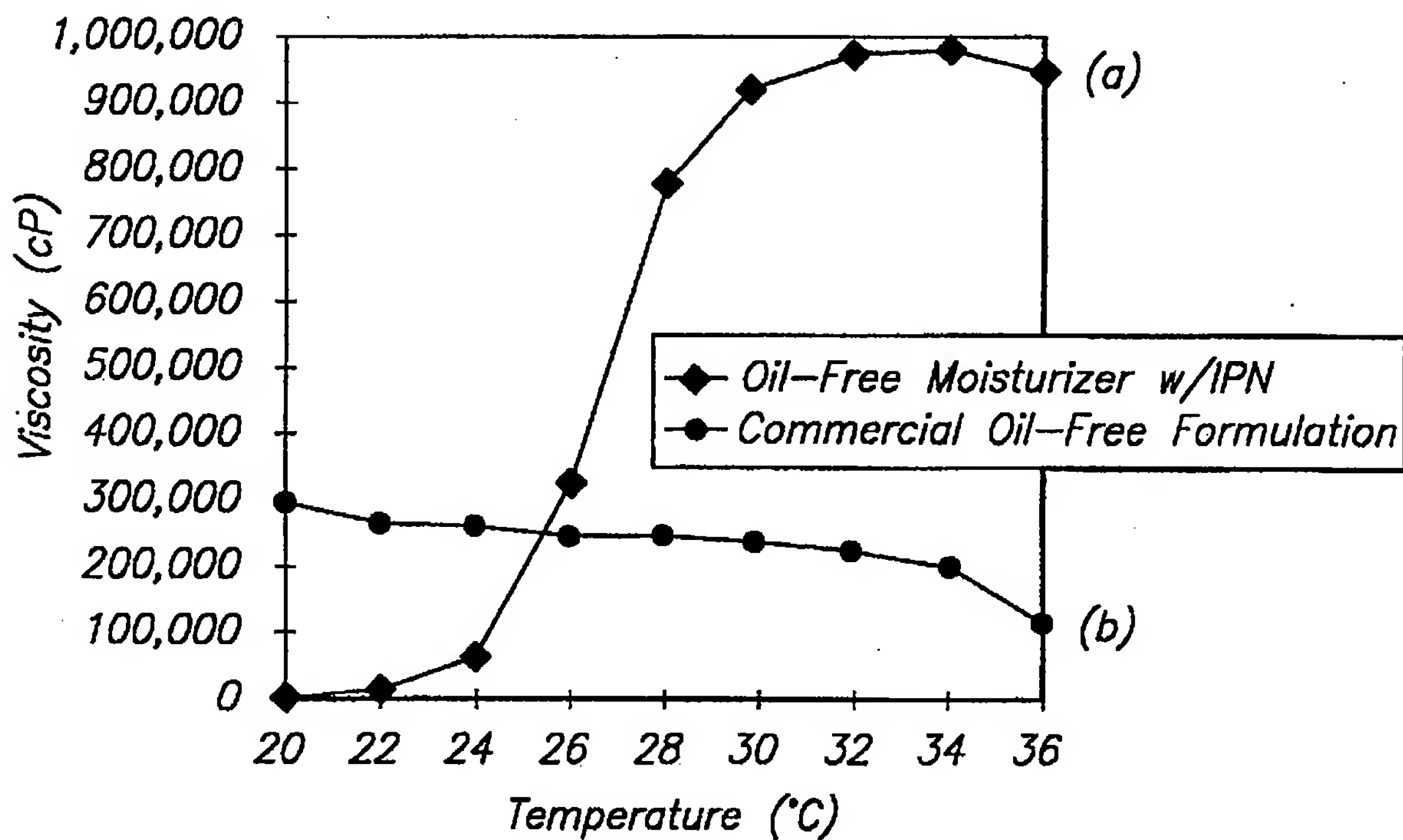


FIG. 17

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**FIG. 18****FIG. 19**

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**FIG. 20****FIG. 21**

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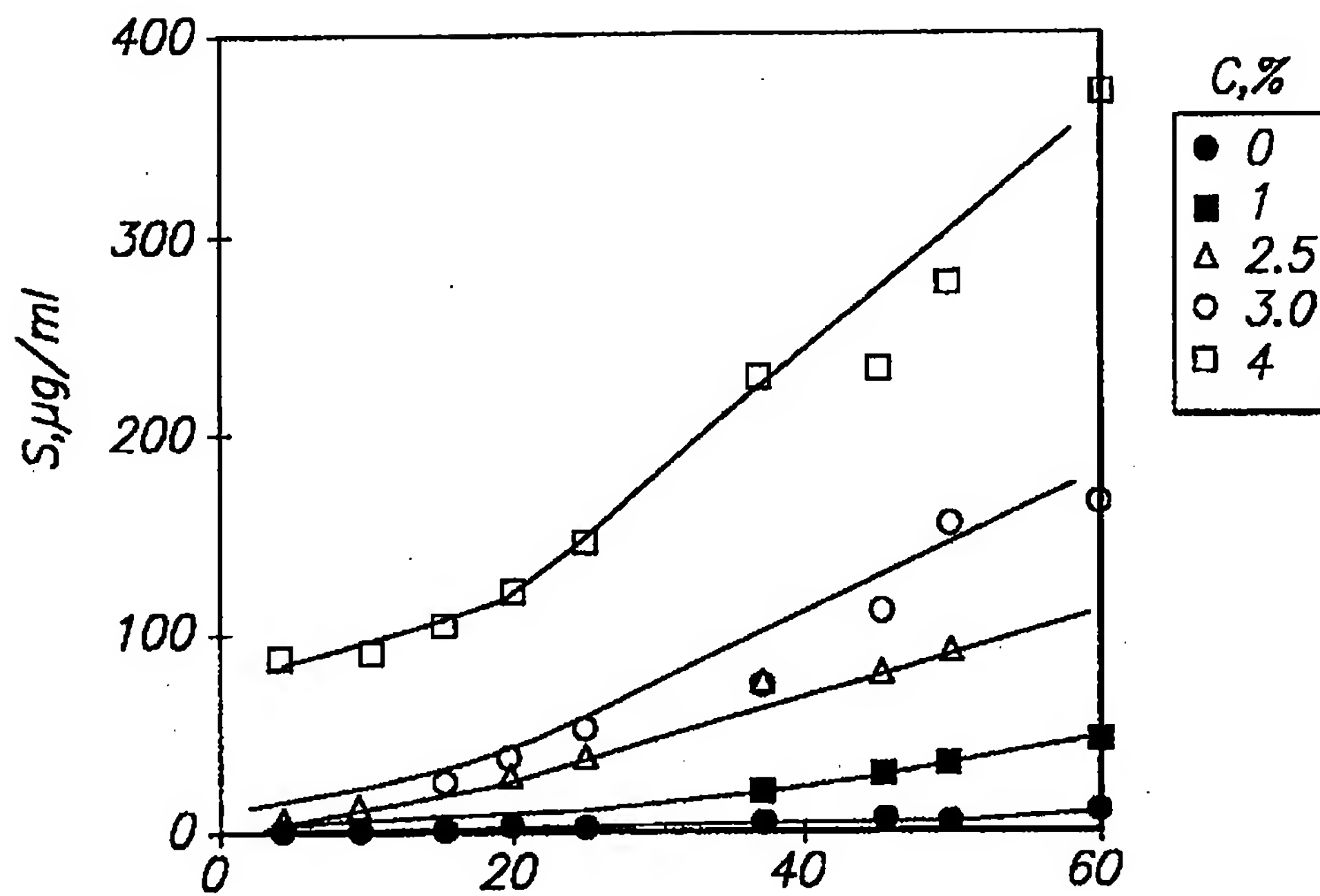


FIG. 22A

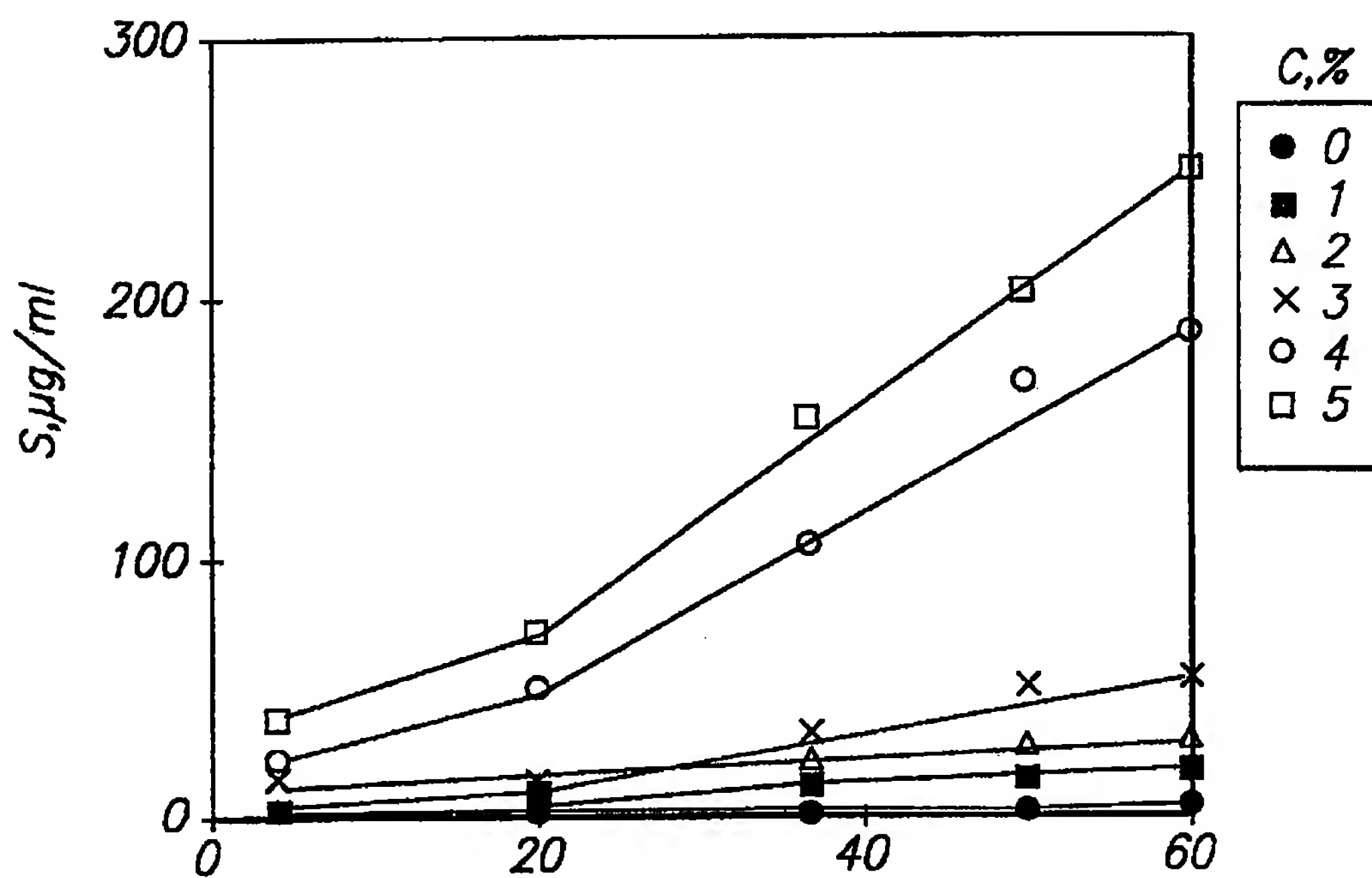


FIG. 22B

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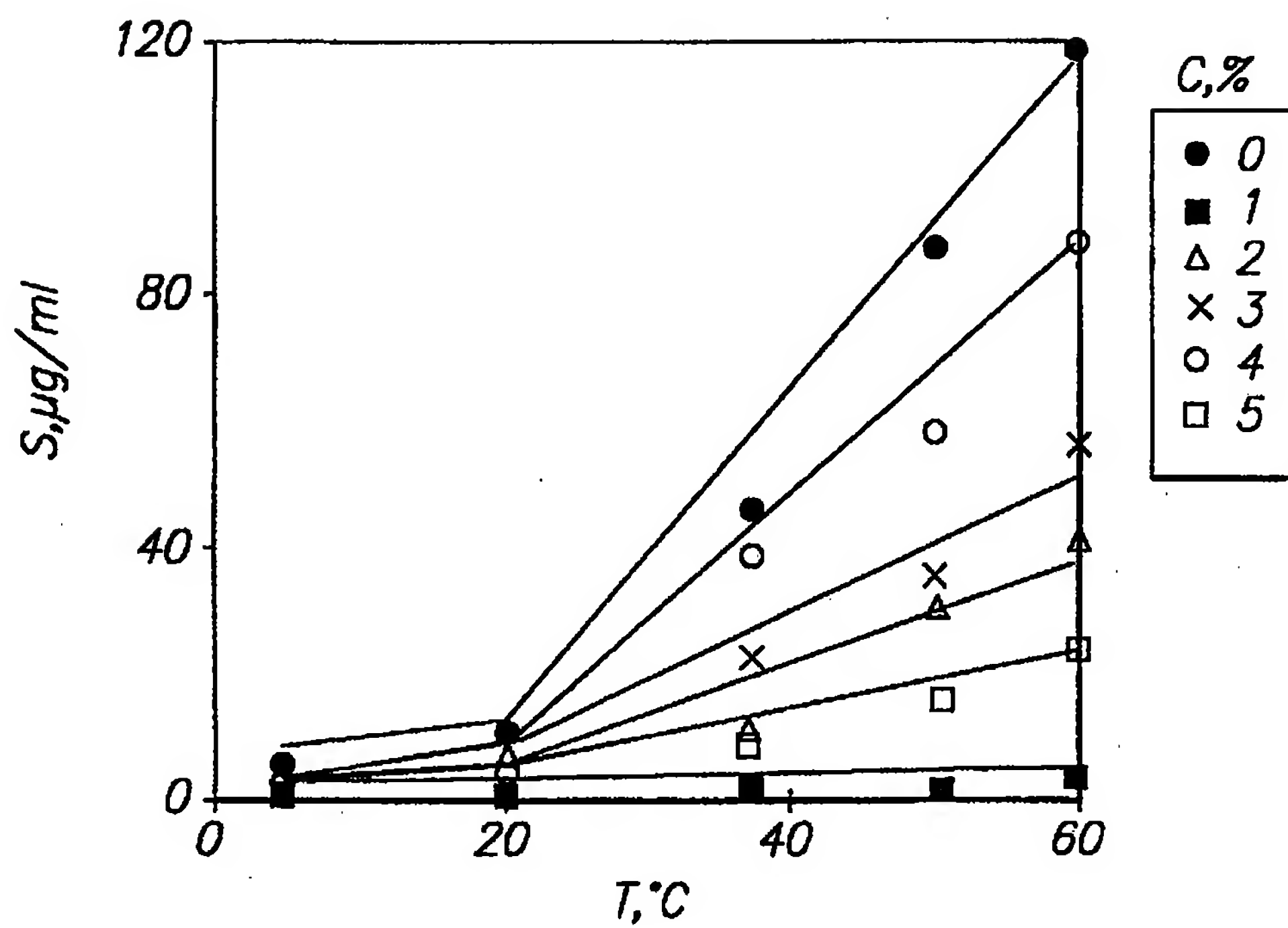


FIG. 22C

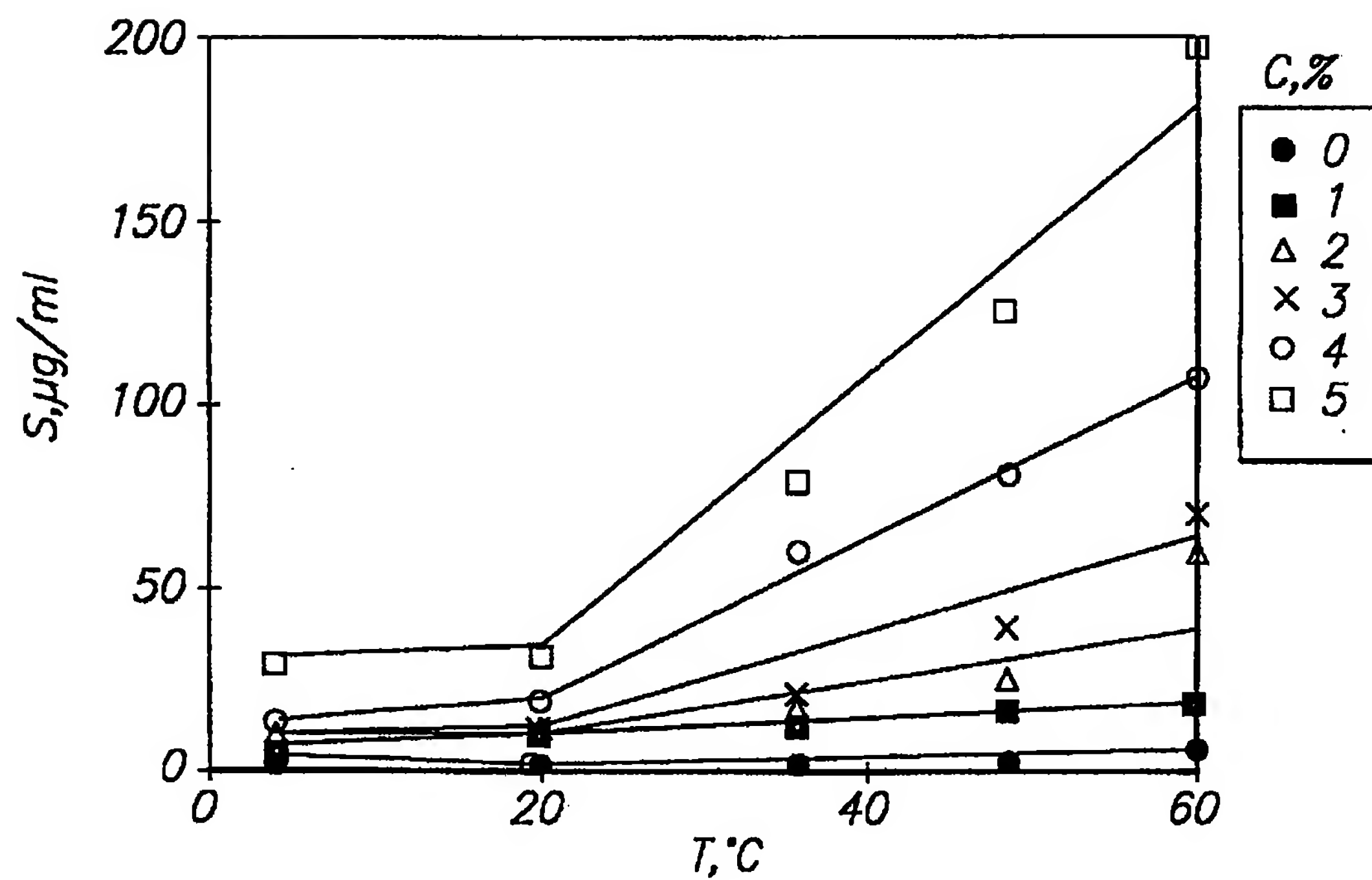


FIG. 22D

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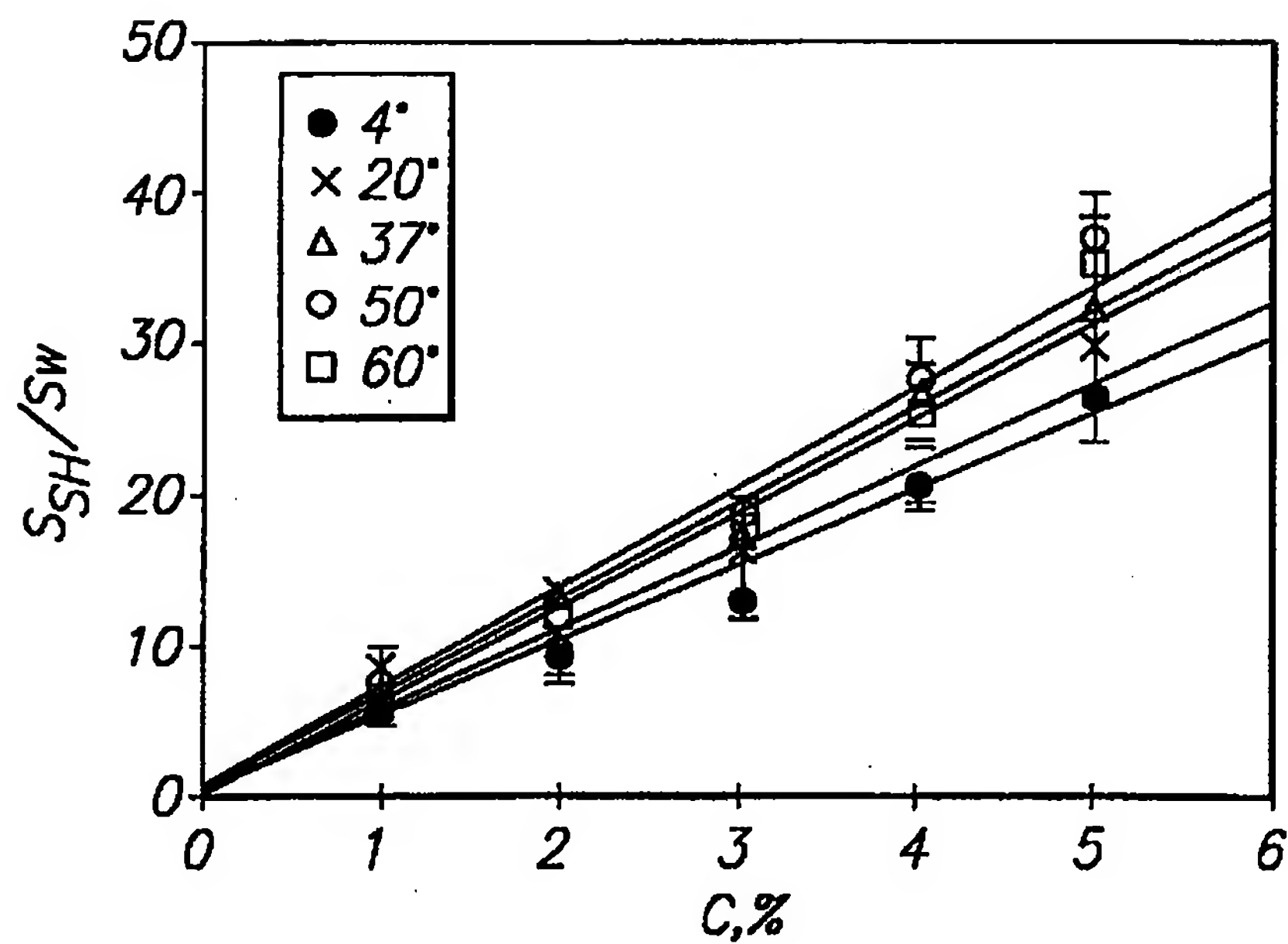


FIG. 23

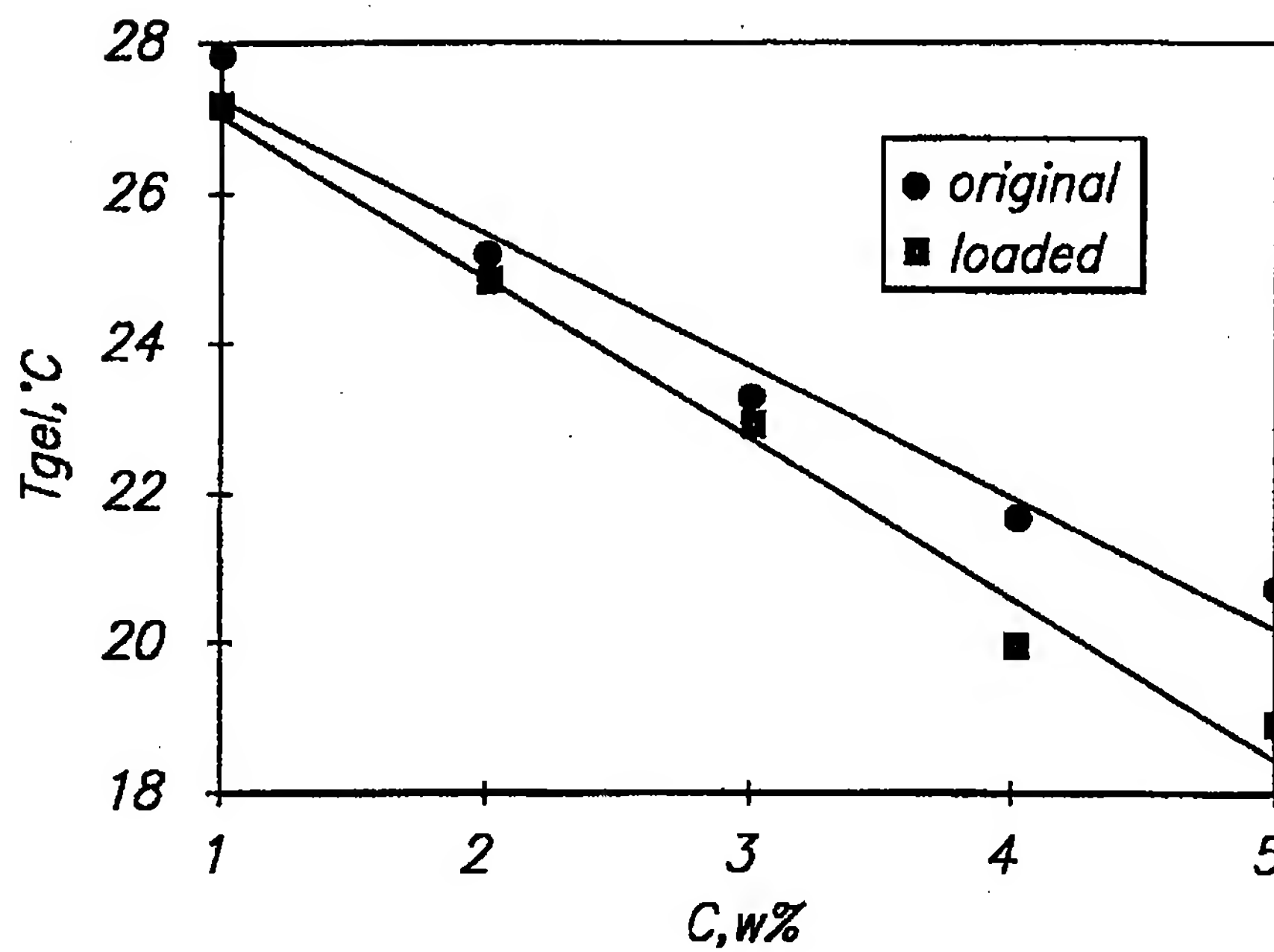
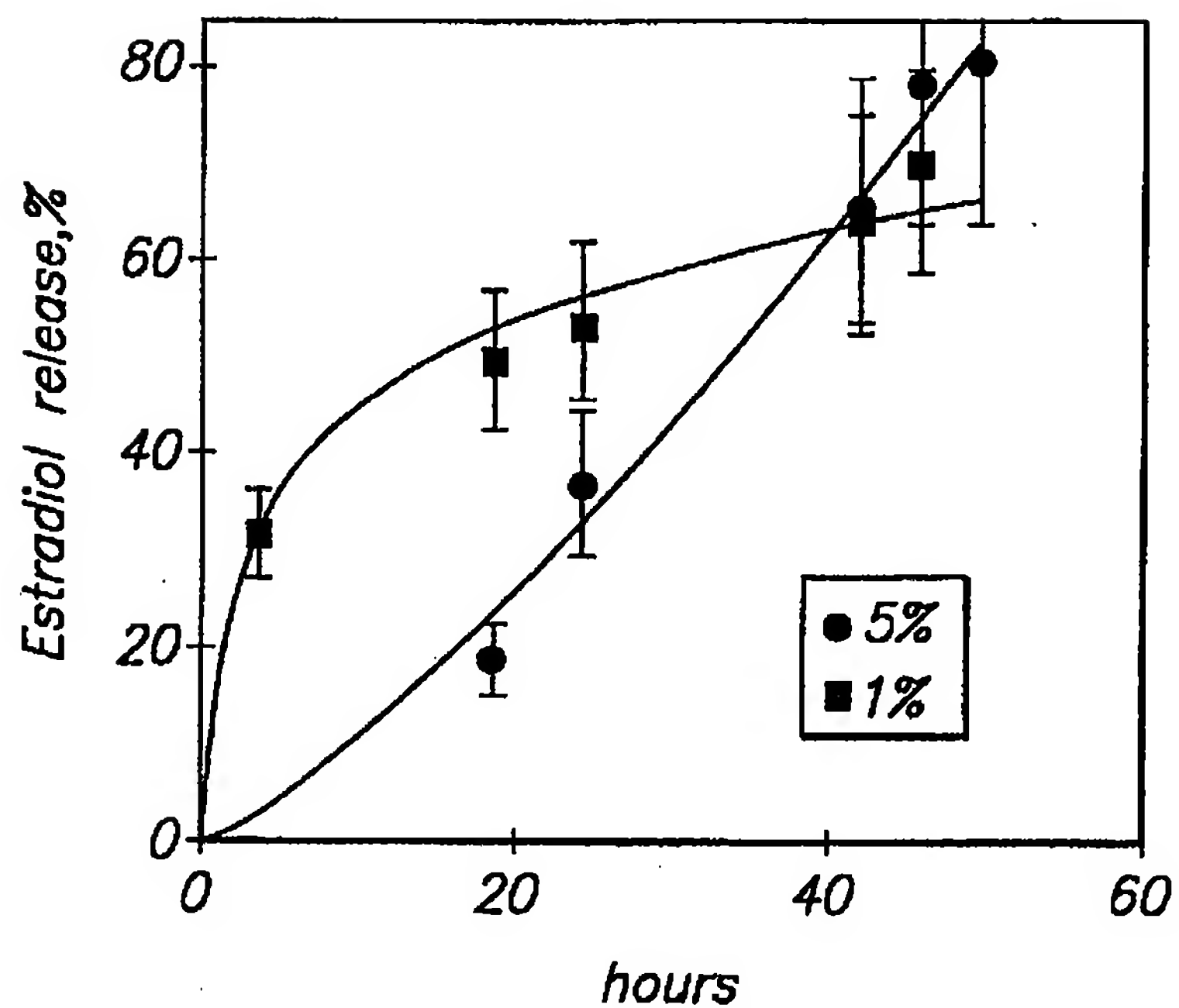
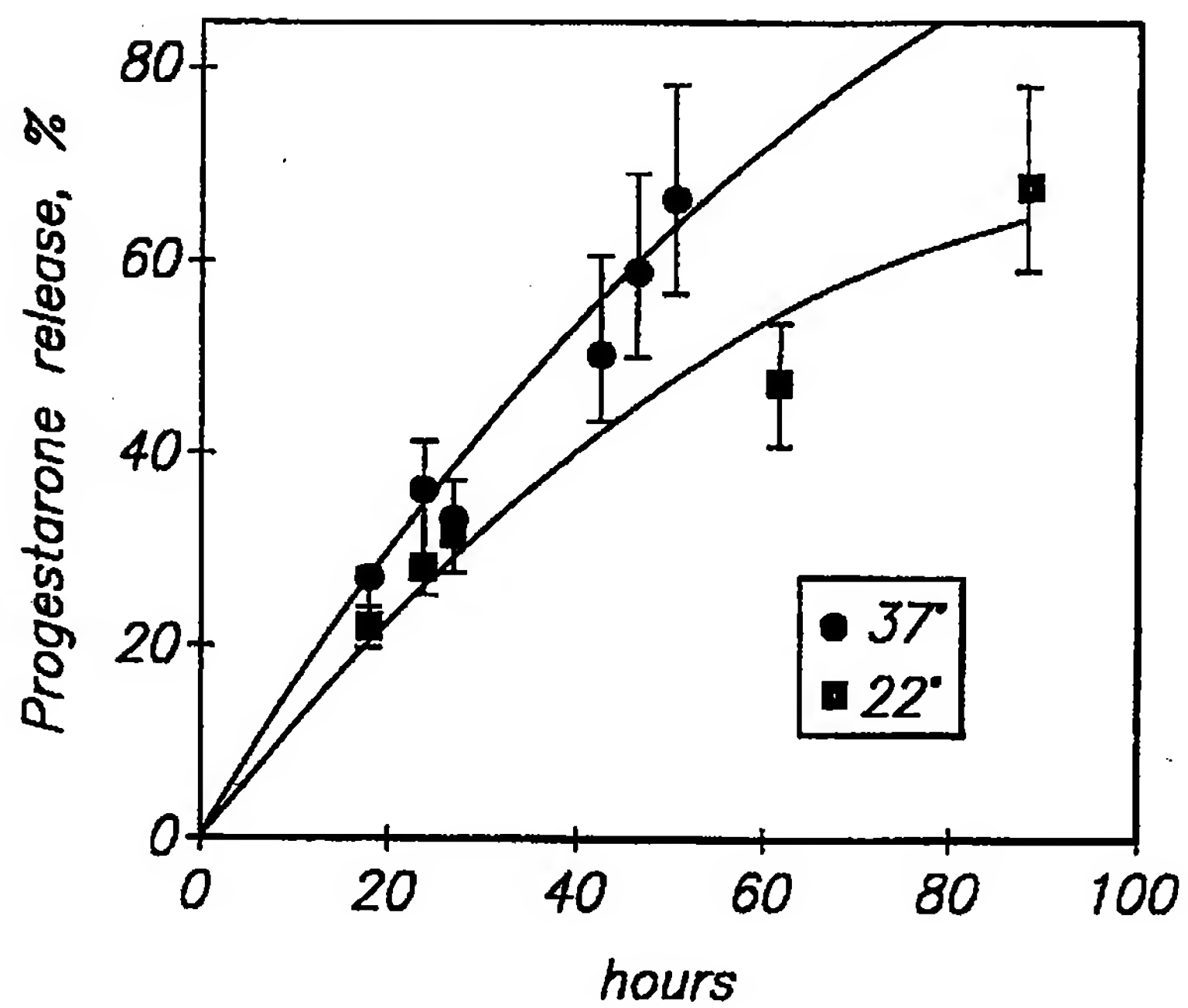


FIG. 24

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**FIG. 25A****FIG. 25B**

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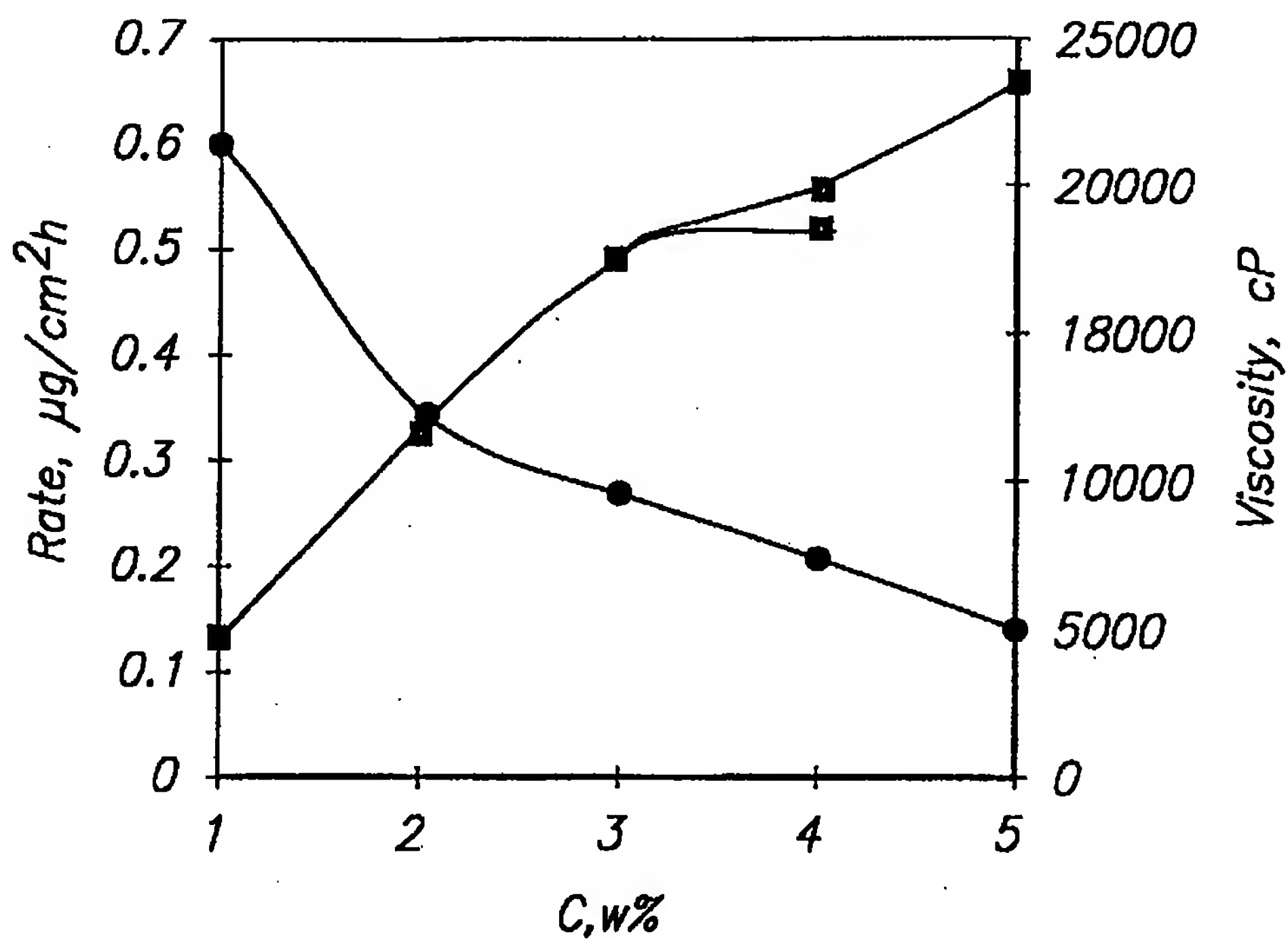


FIG. 26

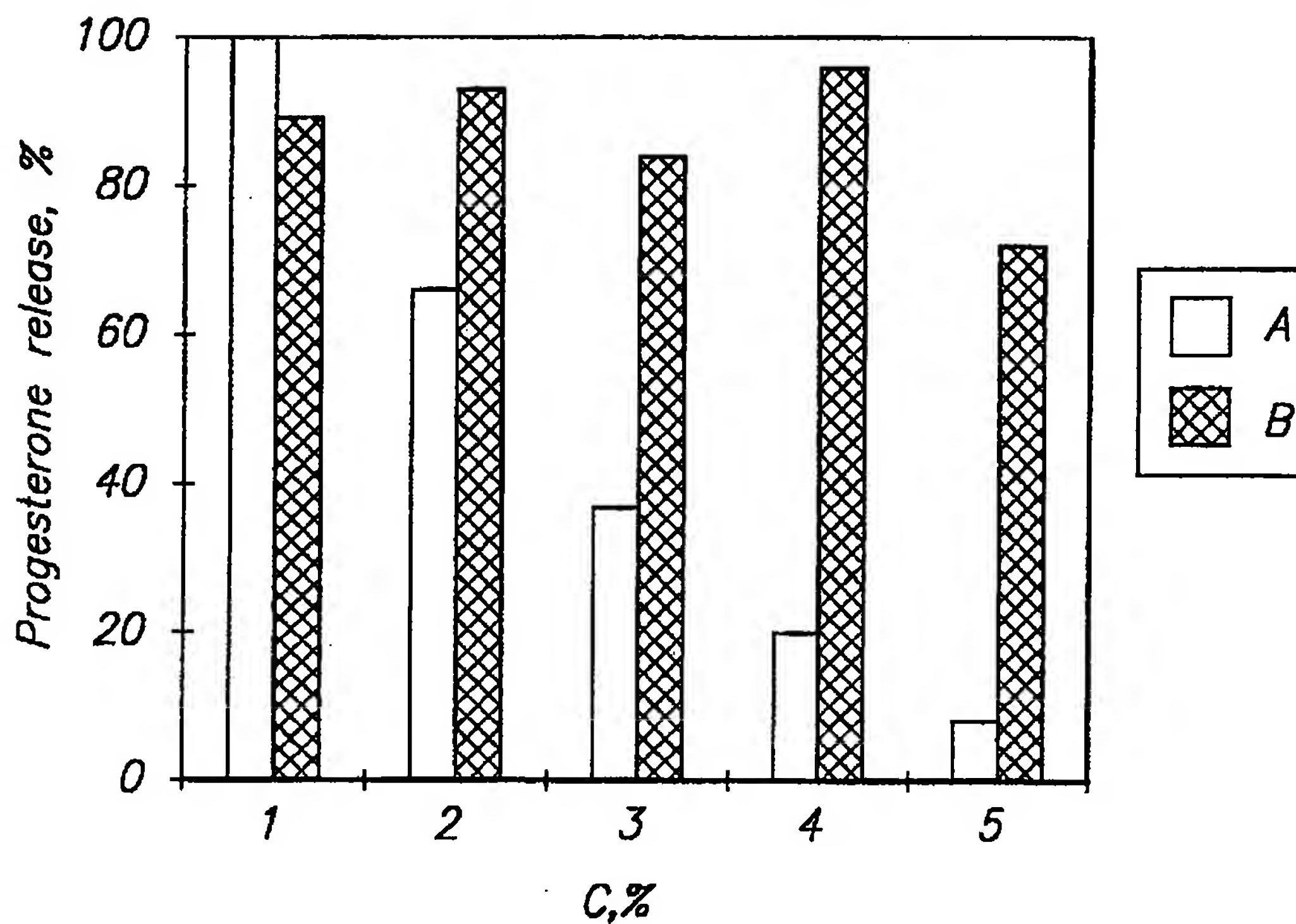
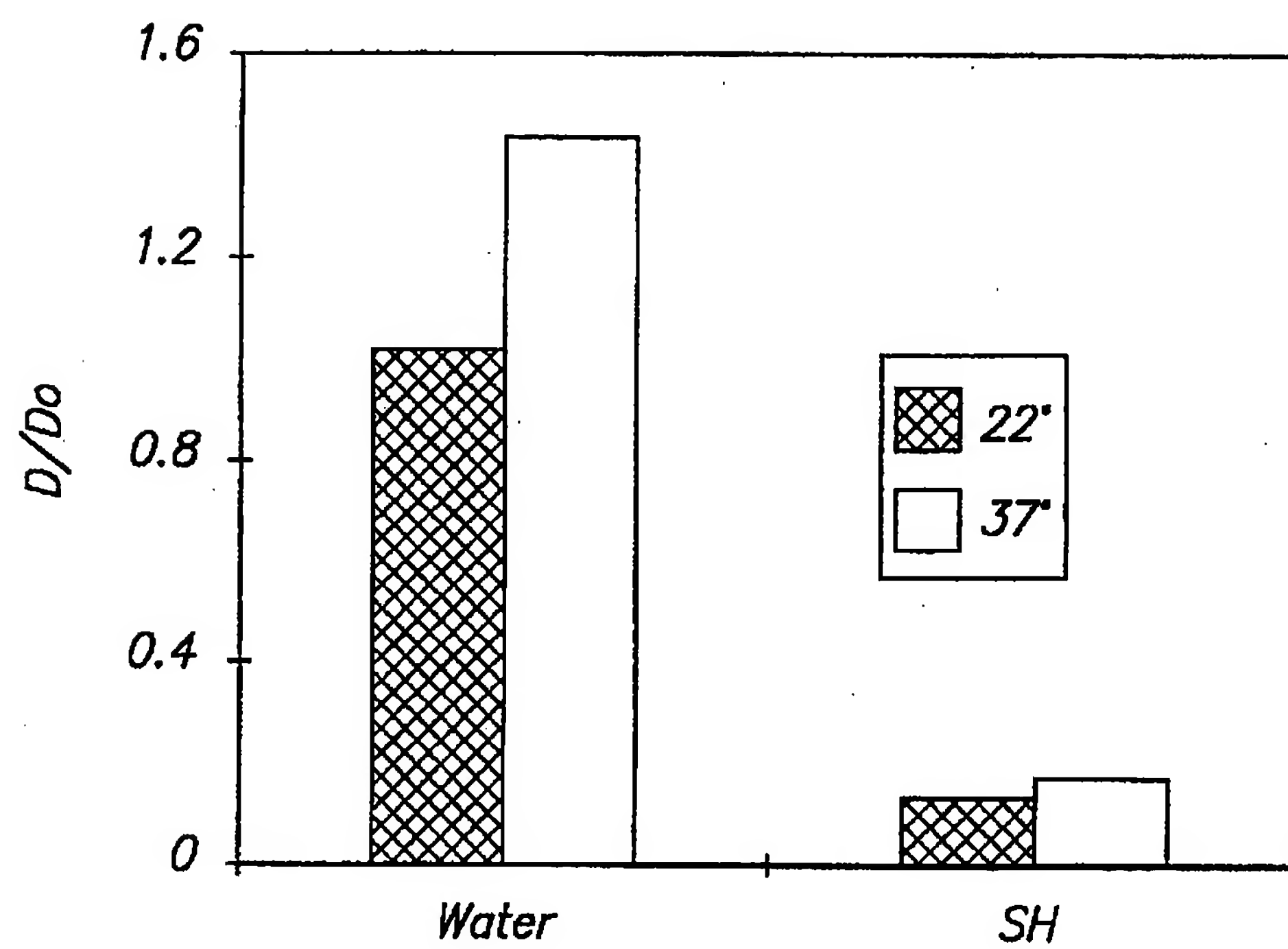


FIG. 27

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**FIG. 28**

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/09211

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 7/00, 7/021, 7/025, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74

US CL :Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/49, 59, 63, 64, 65, 70.1, 70.2, 60.7, 78.02, 78.08, 400, 401, 405

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS: COSMETIC, POLYACRYLIC ACID, POLYMER NETWORK, POLOXAMER

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 5,662,892 A (BOLICH, JR. et al.) 02 September 1997, see entire document.	1-38
Y	US 5,106,609 A (BOLICH, JR. et al.) 21 April 1992, see entire document.	1-38



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

03 AUGUST 1998

Date of mailing of the international search report

01 SEP 1998

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SHELLEY A. HANSON